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Original Article

Dispositional Mindfulness as a Mediator of the Relationship Between Perceived Stress and Burnout in Young Medical Professionals

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ABSTRACT

The study aimed to investigate the effect of burnout in predicting perceived stress among young doctors. Additionally, it is aimed to explore the mediating role of dispositional mindfulness. A sample of N = 460 young doctors including (n = 249) males and (n = 211) females with age ranging from 22 years to 35 years including house officers, post graduate trainees, medical officers and dentists from public hospitals of Rawalpindi, Islamabad, Lahore and Peshawar cities of Pakistan with minimum six months' job experience. Along with demographic sheet, participants' responses were collected on Oldenburg Burnout Inventory, Perceived Stress Scale and, Mindful Attention Awareness Scale. Correlation analysis was computed to investigate the relationship between burnout, perceived stress, and dispositional mindfulness. A significant positive relationship between perceived stress and burnout was evidenced whereas, significant negative relationship between perceived stress and dispositional mindfulness, as well between dispositional mindfulness and burnout was reported. Results also showed that females have higher level of perceived stress and lower emotional stability as compared to males. Dispositional mindfulness mediates the relationship between perceived stress and burnout. It is concluded that dispositional mindfulness is a protective factor against negative consequences of perceived stress and also provide some indigenous contributions in existing research in the field of medical profession.

Introduction

Generally, doctors are frequently experiencing a variety of situations in their daily routine work, and they are at high risk of suffering from various mental and physical disorders. By nature of their work, they are exposed to overwhelming negative emotions such as the need to

rescue the patients, feelings of failure, and barriers in their day-to-day routine of medical environment. The feelings of helplessness against the administration or institutional related problems and facing insecurity in clinical practice or have a desire to evade patients resultantly put them in a state of despair and they always have an intent to escape these cynical feelings. This situation as a stressor leads the medical profession in a predicament where the individual feels stressed and consequently predict burnout stage, or feels a deficiency of common and specifically psychological well-being.

Stressors are the key determinant that leads to burnout, numerous researches have established a noteworthy association between stress and exhaustion, and it is generally agreed upon that higher level of stress in the workplace leads to higher level of burnout (Watson, Deary, Thompson, & Li, 2008). Prolonged periods of stress can lead to negative health outcomes like burnout (Demerouti, Bakker, Nachreiner, & Ebbinghaus, 2002). In the light of antecedent researches, the predominant reason for burnout is interaction to negative circumstances and happenings (Maslach, Schaufeli, & Leiter, 2001). Stress and stressors drive humans to thrive for success, but when it exceeds a certain limit, it leads to various negative consequences such as burnout, which is the result of persistent psychological and physical exhaustion (Dyrbye et al., 2014).

Recent studies are focusing on positive variables to minimize the drastic consequences of stress and burnout. The person may manage stress by efficiently employing positive variables like dispositional mindfulness. Multiple researchers in literature have pointed out the effectiveness of mindfulness for minimizing all negative emotions like stress, depression, and burnout and also enhancing the quality of human life (Khoury, Sharma, Rush, & Fournier, 2015).

Prevailing stress and burnout have a strong bearing upon health among medical practitioners and resulted in numerous harms such as stomach aches, deprivation of sleep, and constant headache (Ahmad et al., 2018). Bonn and Bonn (2000) focused that unusual and unrealistic demands of patients and high expectations from doctors, low control over nature of the job and creating balance among family and work always produce stress and frustration which leads to dissatisfaction and ultimately burnout. Among other vulnerable factors for doctors include fear, frustration, anger, helplessness, and hopelessness are just because of cynicism or distrust from others and specifically owing to the negative behaviour of patients. These antecedent factors turnout resultantly as a cause of burnout for a doctor (French, McKinley, & Hastings, 2001). The greater levels of occupational stress have more chances to result in greater levels of burnout (Steinhardt, Jaggars, Faulk, & Gloria, 2011). Moreover, stress as compared to the life and health stress may significantly lead towards burnout (Hao, Hong, Xu, Zhou, & Xie, 2015).

Longitudinal studies established linkage between increased perceived stress and burnout among house officer, practicing physicians, and health care workers (Maslach et al., 2016). Burnout has been reported in almost every single filed of medical specialty among which 69% are surgical residents (Elmore, Jeffe, Jin, Awad, & Turnbull, 2016) and 40-60% are among practicing physicians (Shanafelt et al., 2009). The matter is increasing, and a recent survey among physicians in the United States revealed that 8.9% increase in burnout between 2011 and 2014 (Shanafelt et al., 2015). Literature reveals various contextual and personal factors that may play a role as dynamics of mindfulness or that may be consequences of mindfulness.

Dispositional mindfulness may reduce stress (Hofmann, Sawyer, Witt, & Oh, 2010), increase cognitive flexibility (Siegel, 2007), increase the capacity to focus (Moore & Malinowski, 2009), lower the emotional reactivity (Ortner, Kilner, & Zelazo, 2007), boosts working memory (Jha, Stanley, Kiyonaga, Wong, & Gelfand, 2010), and enhance health (Hassed, De-Lisle, Sullivan, & Pier, 2009).

Existing literature gives the evidence of dispositional mindfulness as acting a mediating and buffering role between the relationship of perceived stress and burnout and plays significantly part as a positive personal variable between stress-burnout connection. Dispositional mindfulness is negatively associated with burnout among medical doctors, and it minimizes the connection between stressful events and both components of burnout, including exhaustion and depersonalization (Voci, Veneziani, & Metta, 2016). Mindfulness may help persons to regulate their emotions and anticipations more efficiently and thus guarding them against the inception of burnout symptoms (Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). Greater dispositional mindfulness is worthwhile that high level of dispositional mindfulness significantly decreases threat of stress, distress, and vulnerability to burnout (Lebares et al., 2018). Vinothkumar et al. (2016) conducted a study and concluded that the mediational models indicate a relationship between adaptive coping strategies and perceived stress was meaningfully mediated by mindfulness. Mindfulness and self-compassion play a mediating role in the decrease of stress and burnout, including signs of anxiety and depression (Roeser et al., 2013). Present Study is based on transactional model by Lazarus and Folkman (1984). According to this model stress leads to primary and secondary appraisals in which secondary appraisal include dispositional mindfulness which further leads to burnout.

The research has focused to discover the role of perceived stress or stressors leading to burnout and what would be the role of individuals' dispositional mindfulness as personal variable in the connection of perceived stress and burnout among young medical doctors. Thousands of Pakistani youth are opting medical profession every year, and these young medical doctors are more prone to stress and associated negative emotions thus, burnout becomes inevitable. Leading sources of stress (stressors) and burnout among young medical doctors, including additional levels of responsibility of life, extended working hours, and adversative working conditions, and conclusively it would be significant to understand stress and burnout of young medical doctors and the anticipate correlation exists between them (Aslam, Mansoor, & Suleman, 2013).

Material and Methods

Perceived Stress Scale (PSS)

Perceived Stress Scale (PSS; Cohen et al., 1983) was used to measure the levels of perceived stress. This scale consists of 10 items and item examples include, ‘‘How often have you felt nervous or stressed?’’ and ‘‘How often have you felt confident about your ability to handle your personal problems?’’. Individuals rated how often they had experienced these feelings in the last month on a 5-point Likert scale from (0 = never, to 4 = very often). PSS scores were obtained by reversing the scores on the four positive items; the items were 4, 5, 7, and 8. Total scores range from 0 to 40, with higher score indicates overall greater stress and vice versa. PSS has a .78 alpha coefficient (Cohen & Janicki-Deverts, 2012).

Oldenburg Burnout Inventory (OLBI)

Oldenburg Burnout Inventory (OLBI; Demerouti & Bakker, 2008) was used to assess levels of burnout. This scale comprises of 16 items (Exhaustion: 08 items, Disengagement: 08 items) and item examples include, "I always find new and interesting aspects in my work" and "There are days when I feel tired before I arrive at work." This scale has a 4-point Likert scale from (1 = strongly agree, to 4 = strongly disagree). OBLI scores were obtained by reversing the scores on the 08 positive items; the items were 2, 3, 4, 6, 8, 9, 11, and 12. Total scores range from 16 to 64, (Subscales; Exhaustion 8-32 and Disengagement 8-32) with higher score indicates an overall greater level of burnout and vice versa. OBLI has .85 (Exhaustion .74, Disengagement .67) alpha coefficients (Demerouti & Bakker, 2008).

Mindful Attention Awareness Scale (MAAS)

Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) was used to assess dispositional mindfulness. This scale contains of 15 items, such as, ‘‘I tend to walk quickly to get where I’m going without paying attention to what I experience along the way’’ and ‘‘I get so focused on the goal I want to achieve that I lose touch with what I’m doing right now to get there’’. Participants were asked to rate their agreement on a 6-point Likert scale from (1 = almost always, 6 = almost never). There is no reverse scoring in this scale. Total score range from 15-90, a higher score reflects a higher level of dispositional mindfulness and vice versa. MAAS has a .86 alpha coefficient (Brown & Ryan, 2003).

A total sample of 460 young medical doctors (N=460) (House Officers, Post Graduate Trainees, Medical Officers and Dentists) having minimum 6-month job experience in public sector hospitals from Rawalpindi, Islamabad, Lahore and Peshawar cities of Pakistan with different demographics.

Results

Table 1: Pearson bivariate correlation among study (N = 460)

Scales	Items	α	1	2	3	4	5
Perceived Stress Scale	10	.77	-	.53**	.53**	.43**	-.43**
Oldenburg Burnout Inventory	16	.77		-	.92**	.88**	-.38**
Exhaustion	08	.70			-	.63**	-.36**
Disengagement	08	.54				-	-.32**
Mindful Attention Awareness Scale	15	.87					-
M			18.89	37.60	19.25	18.35	62.67
SD			6.62	6.68	4.04	3.35	14.05

Note. Note. M = Mean; SD = Standard Deviation; ***p* < .01

Initial analysis showed that alpha reliability coefficients presented in table 1 for Perceived Stress Scale, Oldenburg Burnout Inventory, their subscales, and mindful attention awareness scale, appeared to be medium to good. Statistics presented in table 1 shows that all variable has a normal distribution and suitable for parametric testing. Table 1 further displays the

correlation matrix for perceived stress, burnout, and dispositional mindfulness. This also displays means and standard deviations on study variables. The correlation between perceived stress and burnout was positive and statistically significant (r = .53, p<.01). The correlation between perceived stress and exhaustion was positive and statistically significant (r = .53, p<.01). The correlation between perceived stress and disengagement was positive and statistically significant (r = .43, p<.01). The correlation between perceived stress and dispositional mindfulness was negative and statistically significant (r = -.43, p<.01). The correlation between burnout and their subscales were positive and statistically significant with each other which shows construct validity of the scale. The correlation between dispositional mindfulness and burnout was negative and statistically significant (r = -.38, p<.01). The correlation between exhaustion and dispositional mindfulness was negative and statistically significant (r = -.36, p<.01). The correlation between disengagement and dispositional mindfulness was negative and statistically significant (r = -.32, p<.01).

Table 2: Mean differences in study variables across gender (N = 460)

	Male Young Doctors (*n* = 211)		Female Young Doctors (*n* = 249)				*95% CI*		Cohen's
Variables	*M*	*SD*	*M*	*SD*	*t(458)*	*p*	*LL*	*UL*	*d*
Perceived Stress	17.58	6.05	20.00	6.90	-3.99	.001	-3.59	-1.22	0.37
Burnout	37.23	6.18	37.91	7.08	-1.09	.27	-1.91	.54	-
Exhaustion	18.87	3.94	19.57	4.10	-1.87	.06	-1.44	.03	-
Disengagement	18.36	2.97	18.34	3.64	.06	.95	-.58	.62	-
Dispositional Mindfulness	63.61	13.74	61.88	14.28	1.31	.18	-.85	4.30	-

Note. M = Mean; SD = Standard Deviation; CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit

Gender differences were tested using an independent sample t-test. Results presented in table 2 showed a significant *deference* for perceived stress. An examination of the mean for perceived stress revealed that female young doctors were higher in perceived stress (Mean difference = 2.42, p<.001) than male young doctors. No significant difference appeared on burnout and dispositional mindfulness across gender.

Table 3: Indirect relationship of perceived stress and burnout through dispositional mindfulness (N = 460)

	Burnout			
	Model 1	Model 2	95% *CI*	
Predictors	*B*	*B*	*LL*	*UL*
Constant	27.34***	34.36***	30.79	37.92
Perceived Stress	.54***	.46***	.37	.54
Dispositional Mindfulness		-1.31***	-.71	-1.91
R^2	.28	.31		
ΔR^2		.03		
F	186.72***	106.08***		
ΔF		80.64		

Note. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

Finally, mediation was explored using Process Macro in SPSS 22 to see the effect of dispositional mindfulness in predicting burnout from perceived stress. Table 3 depicts results of mediation analysis while dispositional mindfulness act as a mediator between perceived stress and burnout. Results indicate that total effect of perceived stress on burnout is significant as describes in model 1 and model 2 of table 3, direct effect of perceived stress remains significant while controlling for the effect of dispositional mindfulness. Furthermore, dispositional mindfulness significantly mediates the relationship between perceived stress and burnout (*B* = .08, 95% *CI* = .04, .12) and explaining 3% of variance in the burnout. This mediated model is presented in figure 1.

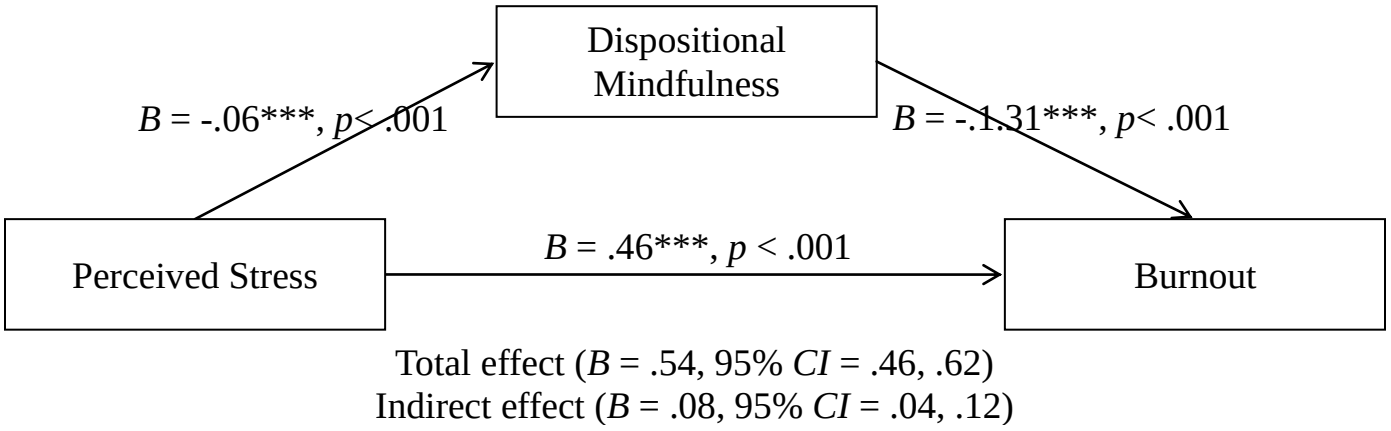

Figure 1: Indirect effect of perceived stress on burnout through dispositional mindfulness.

Discussion

The results of perceived stress scale, Oldenburg burnout inventory, their subscales, and mindful attention awareness scale showed evidence supporting continuation of hypotheses testing for the study. The scales had skewness and kurtosis values within ±1 indicating that data has a normal distribution in the sample and hence sample is assumed to be representative of population (Schroeder, Sjoquist, & Stephan, 2016).

Our assumptions were supported by Correlation results showing a positive relationship between perceived stress and burnout. These findings are coherent with previous literature. A solid evidence is establishing a link between higher perceived stress and burnout in longitudinal studies of medical students, healthcare personnel, and practicing physicians (Maslach et al., 2016). According to Pantaleoni, Augustine, Sourkes, and Bachrach (2014), the starting of medical intern year, 4.3% of internal medicine residents are meeting criteria of burnout, and at the end of the first year of medicine, these levels enhanced to 55.3% with a significant elevation in both components of burnout. Therefore, this study in the light of available literature confirms that perceived stress is a positive predictor of burnout among young medical doctors.

Another assumption that is perceived stress has a significant negative relationship with dispositional mindfulness, also supported by previous literature. In the same way, perceived stress was found to be a significant negative predictor of dispositional mindfulness. The results

indicated incoherence to what was hypothesized and are in the available literature. In various studies, it was found that perceived stress negatively forecasts dispositional mindfulness (Zimmaro et al., 2016) and dispositional mindfulness plays a mediating role among stressors and several outcomes, including rumination (Ciesla et al., 2012), stress, anxiety, and depression (Marks et al., 2010). Another study posits that mindfulness reduces stress appraisals and mitigates reactive responses of stress (Creswell & Lindsay, 2014). Another study confirms that dispositional mindfulness is an inborn quality/characteristic which is beneficial for coping stress, less psychological distress, and enhanced well-being of individuals (Roemer et al., 2015) and along with lower level of instigating cortisol (stress hormone) that is linked with low level of dispositional mindfulness (Laurent, Laurent, Nelson, Wright, & Sanchez, 2015). Therefore, this study is in line with previous literature and reconfirms that perceived stress is a negative predictor of mindfulness among young medical doctors.

Further, the results of the study also supported our assumption regarding significant negative relationship between dispositional mindfulness and burnout. All the previous available literature lines up with our findings of this study and confirms what was hypothesized. In one study it was found that the mindfulness is protecting individuals from the start of burnout (Shapiro et al., 2008) and dispositional mindfulness is negatively related with burnout of medical doctors and minimizes the relation between stressful happenings and both components i.e., emotional exhaustion and depersonalization of burnout (Voci et al., 2016). According to one study earlier it was revealed that the risk of high stress, high anxiety, moderate to severe depression, emotional exhaustion, depersonalization, and suicidal ideation are considerably lower in those individuals who have a higher level of dispositional mindfulness (Lebares et al., 2018). Therefore, this study also confirms previous literature that dispositional mindfulness negatively predicts burnout among young medical doctors.

Furthermore, another assumption that is focused on establishing that dispositional mindfulness mediates the relationship between perceived stress and burnout. As hypothesized dispositional mindfulness did play a mediating role between stress and burnout. The results are in line with the available literature. In one study conducted by Creswell and Lindsay (2014) suggests that mindfulness reduces stress appraisals and decreases stress reactivity responses and these stress lessening effects partially or completely describe how mindfulness affects the outcomes of mental and physical health, and also mindfulness can effect burnout. Abenavoli et al. (2013) determined that mindfulness has a solid and persistent negative relation with occupational burnout. In one more study conducted by Roeser et al. (2013) concluded that mindfulness mediates the connection between stress and burnout and helps doctors in terms of enhancing their self and body-awareness and by minimizing their stress and burnout level at the workplace.

There were certain limitations of present research, more in-depth studies using multi-methods including extensive interview techniques can be used to understand how the major stressors in life of a young medical doctors can proceed to burnout and how dispositional mindfulness can play the role of protective factors against such stressors and stress and prevent from burnout. It is also suggested that further expansion of the sample to more cities and hospitals across Pakistan may be ensured in the further and upcoming studies, and the expansion of the sample should be a truer representation of the population of young medical doctors in Pakistan.

Conclusion

The present research evidenced that perceived stress leads to burnout yet disposition mindfulness shields against such adverse outcomes. It is suggested that interventions shall be devised to induce dispositional mindfulness among young doctors to fight against burnout inculcate through perceived stress. The introduction of mindfulness and resilience-based education programs may be introduced in stressful job setups, like medical profession. Concerned authorities are required to train young medical doctors to enable them to deal with stressors and burnout effectively and also enhance their cognition and emotional regulations.

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