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Relationship between Psychological Capital and Psychological Well-Being of Doctors Working in Emergency Wards; Mindfulness as Moderator

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Abstract

Doctors, working in a high-stress environment, like emergency departments, can suffer from significant psychological distress which can lead to poor job performance and increased burnout. In such situation these positive personality attributes such as psychological capital, mindfulness may enhance performance and keep doctors away from burn out and enhance Psychological Well-being. The current study examined the relationship between psychological capital and psychological well-being (PWB) of emergency doctors in Pakistan, and whether mindfulness moderated that relationship. A quantitative, cross-sectional research design was used to collect data from 210 doctors (116 males, 94 females; Mean age = 31.09 years) using the Psychological Capital Questionnaire (Luthans et al., 2007), Ryff's Psychological Well-Being Scale (Ryff & Keyes, 1995), and the Mindfulness Attention Awareness Scale (Brown & Ryan, 2003). Results showed a strong, positive relationship between psychological capital and psychological well-being with psychological capital accounting for 16% variance in psychological well-being. Mindfulness could not predict psychological well-being, but moderation analysis results showed that mindfulness significantly moderated the psychological capital and psychological well-being relationships. The results showed that the relationship between psychological capital and psychological well-being was significantly stronger as mindfulness increases. These results highlight the important of developing psychological capital and mindfulness in healthcare professionals in enhancing resilience and psychological well-being in a challenging and high-stress emergency department.

Keywords: Psychological Capital, Psychological Well-being, Emergency, Doctors

Introduction

The emergency healthcare environment is by nature demanding, high-pressure, and emotionally exhausting. Healthcare providers who work in emergency departments routinely deal with traumatic incidents, perplexing medical conditions, and rapid decision-making, which contribute to subsequent stress and burnout. Research demonstrates that prolonged exposure to these stressors has substantial effects on the psychological health of physicians,

with emotional exhaustion and compassion fatigue being among the effects (Hetherington et al., 2024; Mushtaque et al., 2021). The presence of long shifts, sleep deprivation, and inadequate resource constraints can augment these negative effects (Das et al., 2020). Despite these factors, some physicians display impressive resilience levels and remain mentally fit even in adversity. Resilience is often ascribed to personal resources that buffer stressors from exerting harmful effects, and one such resource is psychological capital (PsyCap). Psychological capital has been studied extensively in organizational and occupational psychology. Psychological capital is the positive psychological state of an individual characterized by self-efficacy, hope, resilience, and optimism (Luthans et al., 2025). Existing literature has shown the positive effects of psychological capital on job performance and stress management while also enhancing their overall mental health. Even though there is a body of evidence to support the positive effects of psychological capital in various work environments, there is limited literature published on the ways psychological capital has supported the psychological well-being of doctors in high-stress work environments. One of the biggest issues with evaluating psychological capital in high-stress work environments is the lack of research in this area. This is especially important and timely to study psychological capital and how it could potentially be used as a resource to enhance the mental well-being of healthcare professionals in environments that are under difficult conditions. Psychological well-being (PWB) is a complex concept that encompasses life satisfaction, emotional stability, and overall mental health (Ryff, 2014). It has an integral function during professional performance and personal fulfilment as it can affect an individual's ability to cope with stress, develop resilience, and build positive relationships (Hernandez et al., 2017). Ryff's Model of Psychological Well-Being and the Subjective Well-Being (SWB) perspective are the two main models of psychological well-being (Diener, 2009). Ryff's model includes six dimensions of well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth; together, these dimensions influence an individual's overall mental health and capability to cope with challenges in life (Ryff, 2014). For physicians working in an emergency ward, psychological well-being is key to achieving emotional balance and resilience in an environment of high stress and adversity.

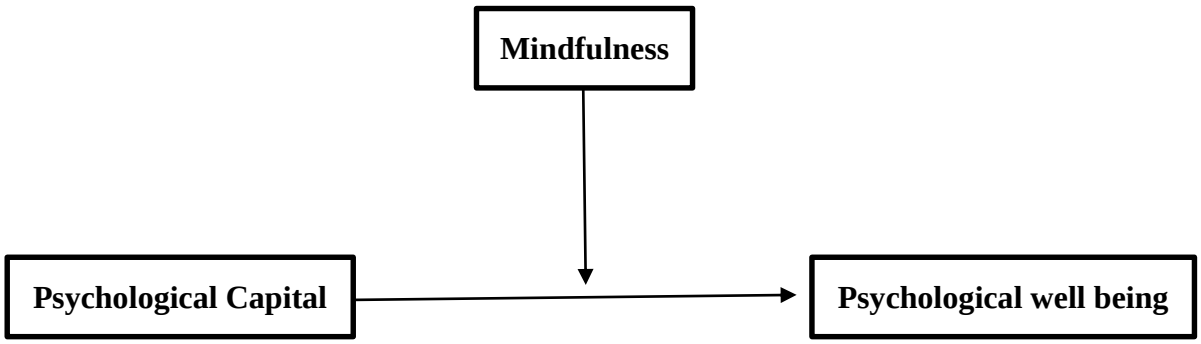
Mindfulness has also emerged as an important factor for promoting psychological well-being and managing stress. Mindfulness refers to an awareness of the present moment that is non-judgmental, and it has been shown to benefit emotional regulation, reduce stress, and facilitate overall psychological functioning (Nguyen et al., 2024; Menefee et al., 2022). Likewise, professionals in high-stress occupations such as healthcare institutions have identified mindfulness as a protective factor for stress management, preventing burnout, and enhancing emotional resilience using the individual-based levels of therapeutic action (Mamede et al., 2022). As a result of the potential advantages of mindfulness, it is increasingly seen as a beneficial resource for healthcare workers, and especially for emergency room (ED) staff, who manage particularly high demands. The connection between psychological capital (PsyCap) and psychological well-being (PWB) has been consistently documented in a range of work contexts, but the relationship hasn't really been studied among healthcare professionals and doctors working in emergency departments. Psychological capital has been shown to be a strong predictor of job satisfaction, stress, and health in healthcare settings (Zhang et al., 2020). Additionally, research has indicated that PsyCap decreased burnout, increased resilience, and improved performance by providing individuals valuable resources to handle the stressors of the job (Luthans & Youssef-Morgan, 2017). Within emergency medicine, PsyCap may act as a crucial buffer against the psychological impact of traumatic events and high-pressure decision making, thus enhancing PWB and job satisfaction. Mindfulness is becoming increasingly acknowledged as an important moderator between psychological resources such as PsyCap and psychological well-being. According to research, mindfulness can enhance the positive impact of PsyCap through better emotional regulation, less rumination, and more robust psychological resilience (Gilbert et al., 2021; Talebiazar et al., 2024). For physicians working in emergency

ward settings, mindfulness and PsyCap could be particularly helpful because they would help physicians not only manage stress better but also enhance their emotional balance that contributes to improved job performance and satisfaction (Othman et al., 2023). In Pakistan, where emergency department doctors face challenges, such as limited resources, overcrowding, and the absence of institutional support for mental health, awareness of mindfulness could serve as a tool for improving resilience and psychological well-being. Despite the possible benefits of mindfulness for doctors, the literature lacks any relevant studies on mindfulness in healthcare settings in Pakistan. Studies among emergency service providers in Pakistan are even more limited, demonstrating immediate need for research in this area. Prior research conducted by Malik and Annabi (2022) found mindfulness had positive effects on stress and well-being among university students in Pakistan. However, we lack evidence regarding its effects on doctors working in emergency departments, which are higher stress environments. Moreover, the lack of mental health support for doctors in Pakistan is complicated by the cultural stigma of mental health, which makes it difficult for healthcare professionals to seek help when in need (Khan et al., 2024). Therefore, the need for an intervention that targets mental well-being and resilience of doctors is evident. In addition to PsyCap, mindfulness demonstrates a potential benefit, given both a clear gap to explore how mindfulness and PsyCap could be delivered in a healthcare setting to improve the psychological wellbeing of physicians, particularly in emergency departments. Addressing the gap in the literature and implementing such an intervention could improve mental health outcomes for healthcare professionals and improve the quality of care in the healthcare system overall.

Research Hypothesis

1. Hypothesis 1: There would be positive relationship between psychological capital and Psychological Well-Being among doctors working in emergency wards.
2. Hypothesis 2: There would be positive relationship between Mindfulness and Psychological Well- Being in doctors working in emergency wards.
3. Hypothesis 3: Mindfulness would act as a moderator between the Psychological Capital and Psychological Well-Being in that, it will complement the positive relationship of Psychological Capital with Psychological Well-Being in doctors working in emergency wards.

Figure 4 Conceptual framework of the study



Methodology

Research Design

This is a quantitative study with a cross-sectional research design.

Study Sample

A convenience purposive sampling techniques is used and doctors working in emergency wards were the participants (Male/Female) in this research study (N = 210) with approximately 106 males and 94 females. Data was collected through questionnaire from doctors of Islamabad, Rawalpindi, Peshawar, Mardan, and Swat.

Inclusion Criteria

Doctors were eligible for inclusion in the study who were actively working in emergency wards or units at the time of data collection. This included emergency departments and dedicated emergency units in the specialties of neurosurgery, pulmonology, intensive coronary care unit (ICCU), urology, gynaecology, nephrology, general surgery, and internal medicine. Only those doctors that had been continuously working in the emergency departments or the specialized emergency units for a minimum of three months were invited to participate. This expected level of experience ensured that the doctors were familiar with the high-pressure environment typical of emergency wards.

Exclusion criteria

Data was not collected from doctors with less than three months of experience in emergency wards; specialists such as psychiatrists, ophthalmologists, dermatologists, or others who do not routinely work in emergency care settings; and doctors primarily engaged in administrative roles or research, with minimal or no direct patient care responsibilities in the emergency ward.

Measures

The following measures were used in this study.

Demographic sheet

The demographics variable includes Age, Gender, Marital Status, Experience of doctors working in Emergency Ward, Department, Job titles.

Psychological Capital (PsyCap)

The Psychological Capital (PsyCap) is a 12-item Scale, also known as the PCQ-12, was developed by (Luthans, Avolio, Avey, and Norman in 2007). It is a shortened version of the original Psychological Capital Questionnaire (PCQ-24) and is widely used to assess the four components of PsyCap: self-efficacy, hope, resilience, and optimism. The PCQ-12 has demonstrated good internal consistency, with reliability (Cronbach's alpha) typically ranging from 0.70 to 0.90 across studies, indicating that the scale is reliable and appropriate for use in different settings (Luthans et al., 2007). The PsyCap 12-item scale consists of four subscales, each representing one of the PsyCap components: Self-efficacy (3 items), Hope (4 items), Resilience (3 items), Optimism (2 items). Each item is rated on a 6-point Likert scale, from 1 (strongly disagree) to 6 (strongly agree).

Psychological Well-Being (PWB)

The Psychological Well-Being (PWB) 18-item Scale was developed by Ryff, & Keyes in (1995). It is a shortened version of her original 84-item scale, designed to measure multiple dimensions of psychological well-being based on a theoretical model. The items as Q1, Q2, Q3, Q8, Q9, Q11, Q12, Q13, Q17, and Q18 will be reverse scored. The PWB 18-item Scale is based on six dimensions of psychological well-being, with each subscale containing 3 items: Self-acceptance: A positive evaluation of oneself and Positive relations with others: Maintaining warm, satisfying relationship, Autonomy: A sense of independence and self-determination. Environmental mastery: The ability to manage one's life and surroundings effectively. Purpose in life: Having goals and a sense of direction in life Personal growth: A feeling of continued development and realization of one's potential. The PWB scales, including the 18-item version, have demonstrated good reliability across various populations. Cronbach's

alpha values for the individual subscales usually range from 0.70 to 0.85, which indicates that the scale has acceptable internal consistency (Ryff & Keyes, 1995).

Mindfulness Attention Awareness Scale (MAAS)

The Mindfulness Attention Awareness Scale (MAAS) is a widely used 15-item scale developed by Kirk Warren Brown and Richard M. Ryan in 2003. The MAAS measures mindfulness, specifically focusing on an individual's ability to be aware of and attentive to the present moment in everyday experiences. The MAAS is a single-factor scale, meaning it does not have multiple subscales but instead focuses on mindful attention and awareness as a unified construct. The items assess the degree to which individuals experience mindfulness in daily life, such as being aware of thoughts, feelings, and activities as they occur, rather than operating on automatic pilot. The MAAS has shown high reliability, with Cronbach's alpha values generally ranging from 0.80 to 0.90 across different studies and populations, indicating strong internal consistency (Brown & Ryan, 2003). Items: The scale consists of 15 items, each rated on a 6-point Likert scale ranging from 1 (almost always) to 6 (almost never). Higher scores reflect greater mindfulness (i.e., more frequent mindful states), while lower scores indicate a tendency to be less aware of the present moment and more distracted or inattentive. Example items include: "I find it difficult to stay focused on what's happening in the present."

Procedure

The data collection emergency departments of tertiary care hospitals in Islamabad, Rawalpindi, Peshawar, Mardan and Swat hospitals. Because of prior approval obtained from the hospital administrations or authorities, the researcher visited the hospitals to directly with the medical professionals in emergency wards. Initially, researchers met with heads of departments and their respective medical professionals. The participants were approached throughout non-critical times in their shifts, so as not to interfere with ongoing medical treatment. The researcher explained the aim, purpose and procedures of the study and an outline of the expected time commitment. They emphasized that participation was entirely voluntary. Each doctor was informed that no one had to participate, and they could withdraw from the study at any time and their decision would have no repercussions. After explaining the study, consent was obtained from each participant before involvement in the study. Consent forms contained statements regarding confidentiality and anonymity of the information provided in the study and that any issues arise that would compromise confidentiality, only medical professionals encompassing the study would see the responses and data would only be used for research purposes. Data was collected through a structured, self-administered questionnaire, which was either completed by the participants immediately in a private area of the hospital or returned to the researcher when the doctor was free to leave.

Statistical Analysis

The collected data was analysed through SPSS, Descriptive analysis, Correlational analysis, reliability analysis, simple linear regression and moderation analysis.

Results

Table 1 Demographic *Information of the Participants (N=210)*

Variable	Categories	Frequency (n)
Gender	Male	116
	Female	94
Age in years		31.09 (Mean)
Marital Status	Married	104
	Unmarried	106
Job Title	General Physician (GP)	1
	Junior Registrar (JR)	2
	House Officer (HO)	47

	Medical Officer (MO)	100
	Postgraduate (PG)	2
	Senior Medical Officer (SMO)	17
	Trainee Medical Officer (TMO)	38
	Women Medical Officer (WMO)	3
Experience in Emergency	In Weeks	111.68(Mean)

Demographic characteristics of the 210 participants are shown in Table 1. On gender among the sample, as 55.2% of participants were male and 44.8% were female. The mean age of participants was 31.09 with a standard deviation 5.00. Most participants were unmarried (50.5%) and held the position of Medical Officer (47.6%). In terms of emergency experience, the mean in weeks is 111.68 with a standard deviation 83.21.

Table 2

Descriptive Statics and Psychometric Properties of the Scales used in the Study (N=210)

Variable	***K***	***α***	***M (SD)***	***Potential Range***		***Skewness***	***Kurtosis***
				Min	**Max**		
Psychological Wellbeing	12	.72	86.36 (13.06)	44	116	-0.75	0.90
Mindfulness	15	.93	43.87 (8.29)	25	70	0.07	0.09
Psychological Capital	18	.79	64.51 (18.18)	15	90	-0.52	-0.63

In Table 2, reliability and descriptive statistics for study variables are summarized. All scales exhibited good internal consistency, as Cronbach's alpha ranged from .72 to .93. The mean scores were 64.51 for Psychological Capital, 86.36 for Psychological Well-Being, and 43.87 for Mindfulness, and all variables exhibited small negative skewness and kurtosis.

Table 3

Pearson Product Moment Correlation among Study Variables (N = 210)

S. No	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Age	-	.68**	.08	.02	-.06	-.02	.00	-.01	-.06	-.04	-.05	-.04	-.03	-.01	-.08	-.48**
2	Experience		-	.10	.02	-.05	.05	.04	-.04	-.06	-.07	.04	.02	.05	.07	-.07	-.50**
3	Gender			-	-.02	.06	.04	.02	.06	.04	-.07	-.12	-.03	-.15*	-.08	-.06	0.10
4	PW				-	-.15*	.36**	.23**	.20**	-.28**	.29**	.39**	.26**	.36**	.23**	.34**	-.04
5	Autonomy					-	-.18**	.22**	-.03	.25**	-.00	-.11	.00	-.16*	-.04	-.12	.03
6	EM						-	.16*	-.02	-.23**	.06	.16*	.13	.17*	.03	.12	.03
7	PG							-	-.00	.08	.07	.11	.19**	.03	-.02	.18**	-.10
8	PR								-	.02	-.04	.10	-.03	.15*	.12	.05	-.00
9	PIL									-	-.07	-.07	-.00	-.12	.05	-.16*	.02
10	SA										-	.18**	.10	.20**	.12	.11	.01
11	PC											-	.74**	.86**	.65**	.74**	.04
12	SE												-	.45**	.30**	.56**	.08
13	Hope													-	.44**	.56**	.02
14	Resilience														-	.24**	-.03
15	Optimism															-	.06
16	Mindfulness																-

Note: *PW*= Psychological wellbeing, *EM*= Environmental Mastery, *PG*= Personal Growth, *PR*=Personal Relation, PIL= Purpose in life, SA= Self-Acceptance, PC= Psychological Capital, *SE*=Self-Efficacy.

In Table 3, the Pearson Product Moment correlations have been shown among the study variables for 210 doctors. Psychological Capital was positively related to Psychological Well-Being ($r = .39$, $p < .01$) and its sub scale, Self-efficacy ($r=.26$, $p < .01$), Hope ($r=.36$, $p < .01$), Resilience, ($r=.23$, $p < .01$), and optimism ($r=.34$, $p < .01$. Psychological Capital and their all four subscales were not correlated with Mindfulness ($r = -.04$, $p > .05$). Psychological Well-Being and its subscales did not show relationship with Mindfulness ($r = .04$, $p > .05$). To test the stated hypothesis the data was analyzed in steps applying Hierarchical Multiple Regression (HMR) Analysis. Results have been presented in table 4.

Table 4

Multiple Linear Regression predicting Psychological Well-being from Psychological Capital and Mindfulness (N=210)

Predictor	**B**	**t**	**P**	**R^2**	**ΔR^2**	**ΔF**	**P**
Model 1				.001		.99	.96
Constant		11.94					
Age in years	0.05	0.21	0.84				
Male/Female	-0.02	-0.35	0.73				
Experience in weeks	0.01	0.16	0.88				
Model 2				.163	.162	39.67	.001
Constant		6.14					
Age in years	0.08	0.90	0.37				
Male/Female	0.03	0.41	0.68				
Experience in weeks	-0.05	-0.55	0.59				
Psychological Capital	0.41	6.30	0.00				
Model 3				.167	.166	81	001
Constant		5.77					
Age in years	0.06	0.68	0.50				
Male/Female	0.04	0.58	0.56				
Experience in weeks	-0.07	-0.79	0.43				
Psychological Capital	0.41	6.35	0.00				
Mindfulness	-0.07	-0.90	0.37				

Table 4 demonstrates that Psychological Capital and Mindfulness are predictors of Psychological Well-being. Table depicts that alone demographic variable account 1% of variance in the psychological wellbeing that is dependent variable for the present study as indicated in Model-1. Furthermore, model 2 reflects the effect caused by Psychological Capital while the demographics variables are controlled. The result shows that the study variables Psychological Capital account for 16% of the total variance in the psychological wellbeing. Thereby, it indicates that Psychological Capital positively and significantly predicts psychological wellbeing ($\beta=.41$, $p<.001$). Findings revealed that increase in Psychological Capital leads to increase in psychological wellbeing. Additionally, model 3 reflects the effect caused by Mindfulness while the demographics variables are controlled. The result shows that the study variables Mindfulness account for 3% of the total variance

in the psychological wellbeing. Thereby, it indicates that Mindfulness is non-significant and do not predict psychological wellbeing (β=-.07, p>.36).

Table 5

Moderation Analysis: Mindfulness as a Moderator Between Psychological Capital and Psychological Well-being (N = 210)

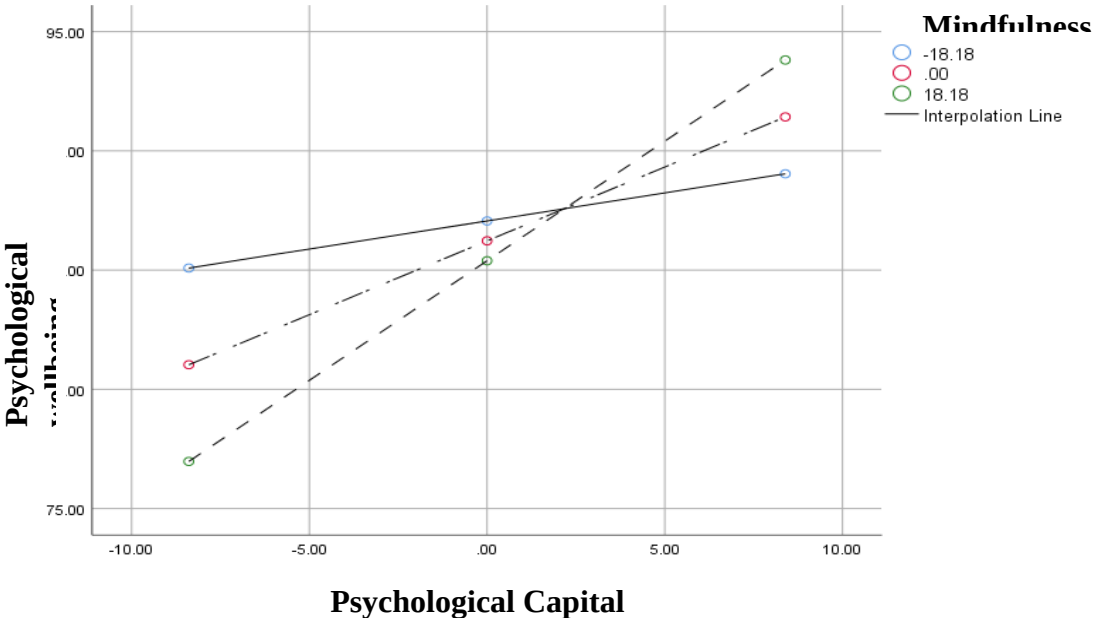
Step	Predictor	SE	β	t	p	R^2	ΔR^2	F(df)
1	Psychological Capital	.09	.61	6.43	.000	.21	–	18.80 (3, 206)
2	Mindfulness	.04	–.04	–1.03	.30			
3	Psychological Capital × Mindfulness	.00	.02	3.70	.000	.05	.17	13.74 (1, 206)

Note. SE = Standard Error; β = Standardized Beta; R^2 = Explained Variance; ΔR^2 = Change in R^2.

Table 5 presents the results of a moderation analysis examining whether mindfulness moderates the relationship between psychological capital and psychological well-being among a sample of 210 participants. In Step 1, psychological capital significantly predicted psychological well-being (β = .61, t = 6.43, p < .001), explaining 21% of the variance (R^2 = .21, F(3, 206) = 18.80). In Step 2, mindfulness itself was not a significant predictor (β = –.04, t = –1.03, p = .30). In Step 3, the interaction term (psychological capital × mindfulness) was significant (β = .02, t = 3.70, p < .001), indicating that mindfulness moderates the relationship between psychological capital and psychological well-being. The final model accounted for an additional 5% of the variance (ΔR^2 = .17, R^2 = .05), with a significant change in model fit (F(1, 206) = 13.74, p < .001).

Figure 1

Mod Graph showing Interaction of Mindfulness for the Relationship Psychological Capital and Psychological wellbeing.



The graph depicts the moderating role of mindfulness in the relationship between psychological capital (PsyC) and psychological wellbeing (Psycho). On the x-axis, psychological capital is represented, while the y-axis reflects psychological wellbeing. Three regression lines demonstrate the interaction at varying levels of mindfulness: high (red), average (green), and low (blue). The red line, representing individuals with high mindfulness, shows a steep positive slope, indicating that greater PsyC is strongly associated with higher Psycho. The green line, reflecting average mindfulness, indicates a moderate positive association between PsyC and Psycho. Conversely, the blue line, corresponding to low mindfulness, shows a nearly flat slope, suggesting that PsyC has little to no impact on Psycho when mindfulness is low. Simple slope analysis confirms these visual trends. At high levels of mindfulness, the effect of PsyC on Psycho is statistically significant and positive ($B = 18.17$, $p < .01$). However, at low levels of mindfulness, the effect is not significant ($B = -18.17$, $p > .05$).

Discussion

This research investigated the relationships between psychological capital (PsyCap), psychological well-being, and mindfulness in a sample of 210 medical professionals working in Pakistan. The findings provide support for positive relationships among these constructs and highlight the relative contributions of the constructs to healthcare workers' mental health and well-being, specifically those working in emergency departments. The average emergency experience was just a little over two years ($M = 111.68$ weeks), which indicates moderate exposure to high-stress clinical environments. The study had one significant finding, which was the positive correlation ($r = .39$, $p < .01$) between Psychological Capital (PsyCap) and Psychological Well-being. Over and above demographics, PsyCap was a significant predictor of Psychological Well-being ($\beta = .41$, $p < .001$) and accounted for 16% of the variance. This indicates that healthcare professionals with higher levels of the elements of PsyCap (hope, optimism, resilience, and self-efficacy) have higher levels of mental health and well-being. Psychological capital was a significant predictor of well-being, supporting the literature that PsyCap can also be used as a protective factor against stress and burnout, while increasing life satisfaction as well as work-related well-being (Luthans, Youssef, & Avolio, 2007). Psychological Capital (PsyCap) is considered a vital resource for improving mental health at the global level. Recent studies support that PsyCap robustly predicts Psychological Well-Being (Avey et al., 2018; Luthans et al., 2021). International studies show that psychological capital is a significant predictor of well-being across different professions and industry sectors. For instance, (Avey et al., 2011) indicated that employees high in psychological capital reported higher levels of psychological health and job satisfaction, suggesting psychological capital is a strong resource for dealing with stressful work situations. The findings of the current study that psychological capital predicts well-being are in agreement with this research, reinforcing the notion that positive psychological resources should be cultivated in high stress environments, particularly in healthcare. The concept of psychological capital has not been researched to a large extent in Pakistan. The gender distribution identified in our sample differs from previous Pakistani studies where men represented the majority (Raza et al., 2019), suggesting recent institutional initiatives supporting gender equity may be having an impact. The distribution of younger respondents (ages 25–35), mirrors the demographics in the national workforce, but indicates the vulnerability of early-career professionals to burnout (Ali et al., 2022; Khan

et al., 2021). However, studies on burnout and work stress among doctors in Pakistan, like Akhter and Sultana (2018) showed that Pakistani doctors experienced significant levels of stress and burnout that led to lower levels of well-being. This research gives hope for improving mental health by demonstrating that enhancing psychological capital which includes self-efficacy, hope, resilience, and optimism can serve as a protective factor against stress and burnout. The findings suggest that when doctors possess higher levels of psychological capital, they are better equipped to cope with the emotional and physical demands of emergency ward settings. This means that targeted interventions, such as psychological skills training, resilience-building workshops, or positive psychology programs, can be implemented to strengthen these internal resources, thereby improving overall mental health and reducing the risk of burnout in high-stress professions. The results also take the next steps in applying international constructs of psychological capital in Pakistan while suggesting a means for enhancing the well-being of healthcare personnel.

In contrast to expectations, Mindfulness did not significantly predict Psychological Well-being ($\beta = -0.07$, $p > .05$) when Mindful was entered into the regression model. Likewise, correlation analysis provided no evidence of a relationship between Mindfulness and Well-being ($r = .04$, $p > .05$). This finding runs counter to a lot of previous research, in particular studies based in Western contexts, which has widely established Mindfulness as a strong predictor of psychological functioning and stress-regulation (Brown & Ryan, 2003; Hülsheger et al., 2013). Mindfulness is said to enhance well-being by enhancing one's moment-to-moment awareness, cognitive flexibility, and reducing rumination (Kabat-Zinn, 1994). The non-significant relationship in the present study may relate to cultural or contextual reasons. In South Asian contexts (including Pakistan) mindfulness may not be well-developed linguistic skill among physicians, especially for those who have not been trained formally in mindfulness. Khan and Rasool (2019) indicated without appropriate interventions or experiences, the concept of mindfulness can often lack relevance in context. It is also possible that the attitudes towards religious and cultural beliefs regarding introspection and meditation, in a non-Western context differ a vast amount from the western conceptualizations of mindfulness (Nisar et al., 2020). Evidence from Zeidan et al., (2010) has shown that mindfulness was found to significantly decrease perceived stress and improve life satisfaction in their data sets. However, in the present study, mindfulness directly related, but not significantly, to psychological well-being in emergency doctors. This finding is contrary to so much of the literature internationally, and it indicates that within this sample and sample context mindfulness may not be used independently in predicting wellbeing without also considering other constructs such as psychological capital before they can act alone and as mediators. While Shapiro et al. (2007) found mindfulness could reduce burnout and enhance wellbeing and we did not find mindfulness to be a conceptual predictor of wellbeing directly in this sample of emergency doctors. Mindfulness practices have predominantly been examined in Western contexts, but their recent application in Pakistan has been of great interest. A study by Raja et al. (2020), found that mindfulness interventions had a statistically significant impact on the psychological well-being of Pakistani health care workers. This finding is consistent with the findings of the present study showing a positive relationship between mindfulness and psychological well-being. Based on the findings of the present study, it is suggested that integrating mindfulness into the culture of medical training programs and continuing

medical education for health workers in Pakistan will reduce burnout and promote better mental health outcomes in a group of work professionals who are often overworked or look to promote the mental health outcomes in patients. Mindfulness is a significant moderator in the relationship between psychological capital and psychological well-being, but did not have a significant direct relationship. The moderation analysis has indicated that psychological capital had a stronger impact on well-being at higher levels of mindfulness. This shows that while mindfulness did not independently predict well-being in this sample, it does strengthen the positive effects of psychological capital on well-being in emergency doctors. In high-stress situations, gaining only a small effect from mindfulness interventions is still practically valuable (Van Dam et al., 2018). More specifically, scores in mindfulness produced a positive moderating effect on the relationship between psychological capital and well-being; this means that people high in PsyCap and mindfulness also reported higher levels of psychological well-being. Therefore, mindfulness may enhance the positive effect of psychological capital on mental health outcomes because people who are resilient, hopeful, and could regulate their emotions through mindfulness may realize better mental health benefits.

Theoretical and Practical Implications

The research provides important insights into the role of psychological capital, mindfulness, and well-being in high-stress work environments, such as healthcare. Hobfoll's (1989) conservation of resources theory (COR), emphasizes the role of psychological capital as an important resource for coping with stress and that individuals with higher levels of psychological capital (i.e., resilience, optimism) are more able to cope with work-related stress and maintain their well-being. This notion parallels COR theory as it has been shown that individuals with high levels of psychological resources can successfully cope with stressful situations (Hobfoll, 1989). Moreover, self-determination theory (SDT), formulated by Deci and Ryan (2000), emphasizes autonomy, competence, and relatedness as meeting psychological needs for well-being. In the healthcare setting where emotional labour takes place, sustainability is often hindered by demands on one's time and workload. Engaging in practices that promote psychological capital and mindfulness can potentially alleviate interruption to psychological needs. The study findings found that both psychological capital and mindfulness-built autonomy and competence, especially in the area of stress. Findings also mirror Lazarus and Folkman's (1984) transactional model of stress, indicating that mindfulness increased the psychological capital-related cognitive reframing process through emotional regulation and coping. Practically, the study suggests that health care organizations broaden the scope of training to include psychological capital, mindfulness-based approaches, and holistic well-being programs to help health care professionals manage stress, reduce burnout, and reduce stress as it relates to well-being and subsequently patient care.

Limitations and Future Research Suggestions

- Due to the study's cross-section characteristics, cause-and-effect conclusions cannot be made. Future studies should utilize longitudinal designs to explore the temporal relationship between psychological capital, mindfulness and well-being.
- The sample in this study consisted of healthcare providers working in emergency departments in Pakistan. Future studies should use a broader sample characterized by a diverse population, which not only includes health workers from other regions, but

also heath workers in different settings and professions, which will help with generalizing the results.

- Although mindfulness acted as a moderator on the relationship between psychological capital and well-being, additional factors such as social support, organizational climate, and coping mechanisms can help to gain a richer interpretation of the factors influencing well-being in healthcare workers.

Conclusion

The current study examined the relationships between psychological capital (PsyCap), mindfulness, and psychological well-being in emergency physicians in Pakistan. Overall, results showed that psychological capital, as characterized by hope, self-efficacy, resilience and optimism, was a comparatively strong positive predictor of doctors' psychological well-being, even in extremely difficult and demanding situations. In contrast, mindfulness did not predict psychological well-being in this sample. However, while mindfulness did not predict psychological well-being, it significantly moderated the relationship between PsyCap and psychological well-being; specifically, the effect of PsyCap on psychological well-being was stronger among physicians with more mindfulness. These findings indicate that while PsyCap is an important component for well-being, PsyCap is positively affected by mindfulness. This also emphasizes the importance of interventions focused on both PsyCap and mindfulness for the psychological support of emergency department doctors.

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