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Correlation between Stress and Meaning in Life in Early Career Doctors in Pakistan

Samiya Iqbal1*

[1] Department of Psychiatry, KRL Hospital, Islamabad

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***Corresponding Author:**

Samiya Iqbal

Department of Psychiatry, KRL Hospital, Islamabad

samiya2008@gmail.com

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ABSTRACT

Doctors experience significant stress in their everyday occupational activities. **Objective:** To assess the correlation between stress and meaning in life in early career doctors in Pakistan. **Methods:** The study design was cross-sectional. It was conducted from March to May 2021 using non-probability convenience sampling with early career doctors in Pakistan as the subjects. The data was collected using a form distributed online that included demographic variables, Purpose in Life (PIL) test and Perceived Stress Scale (PSS). SPSS 26.0 was used for data entry and analysis. **Results:** The average score on PIL test was 67.64 ± 15.20 and PSS was 20.20 ± 5.88. Women doctors reported higher perceived stress (18.82 ± 6.11) than men (20.75 ± 5.07). A statistically significant negative correlation between the PIL and PSS was found, $r(215) = -.610$, $p < 0.01$. $r = -0.610$ represents a large effect size. **Conclusions:** Higher meaning in life is associated with lower perceived stress in doctors. Interventions that focus on meaning in life may help improve the well-being of doctors.

INTRODUCTION

Doctors experience significant stress in their everyday occupational activities. Firth-Cozens reported that compared to 18% of the working population as a whole, approximately 28% of doctors exhibit above-threshold levels of stress [1]. The prevalence of stress among doctors ranges from roughly 24-64%, according to recent studies from India [2], Iran [3], Malaysia [4], and Egypt [5]. This is supported by the available statistics from Pakistan [6, 7]. There are several reasons for this. The nature of work involves confrontation with disease and death under the threat of experiencing violence and the possibility of strict scrutiny and litigation while working long work hours with irregular sleep and meal schedules, pressure to complete tasks in a timely manner and little work life balance. Moreover, doctors tend to put high demands on themselves, can be perfectionistic and may have interpersonal relationship difficulties with peers and seniors. In addition, unavailability of adequate resources and personnel, insufficient compensation for the service and hostile work environment play a role. Because the COVID-19 pandemic added to the burden on the healthcare system and doctors were faced with uncertainties about the disease and personal safety, stress levels increased. This stress can have detrimental personal and professional consequences for the doctor with increased rates of physical illnesses and mental health issues, problems in marital and social life as well as dissatisfaction with career, compromised quality of patient care and medical errors [8, 9]. Neurobiological research suggests chronic, uncontrollable stress impairs the functioning of the prefrontal cortex leading to decreased motivation and difficulty in making decisions [10]. Despite this, most practitioners experience a career in medicine as meaningful. Southwick et al., proposed that meaning in life

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affects on the stress response, resilience, ability to endure adverse circumstances and post-traumatic growth [11]. They draw on Viktor Frankl's Logotherapy, which posits that life is potentially meaningful under all conditions. Even under the most miserable situations, meaning can be discovered by exercising the freedom to choose one's attitude to inescapable suffering and self-transcendence. This allows one to have optimism, altruism, spiritual grounding, social relationships and active coping, which are well known to mitigate stress. From the perspective of health, a greater sense of purpose in life is associated with better cardiovascular indicators, endocrine profiles, cognitive aging and restorative sleep as well as reduced mortality in both young and older adults [12]. Moreover, stress exposure was associated with depression when the presence of meaning in life was low but with high meaning, the association does not hold [13]. The sense of meaning decreases negative appraisals of the situations [14] and repetitive negative thinking after an unpleasant event, leading to healthier coping strategies [15]. It enhances positive affect [16], subjective well-being and life satisfaction [17]. Apart from the indirect effects on the response to stress, empirical evidence suggests a direct effect meaning has on subjective distress experienced by the individuals. A study conducted on palliative care professionals demonstrated that meaning of work and perceived stress were negatively correlated [17]. Similarly, presence of meaning was related to less mental distress in hospice nurses [16]. Moreover, several recent studies confirmed that meaning in life and meaning-centered coping alleviated the coronavirus pandemic stress [18, 19]. However, there were no available studies that investigated the effect of meaning in life on stress experienced by Pakistani doctors. This study was planned to pave the way for further empirical research in this area and if the findings are consistent with the literature presented above, meaning-centered interventions can eventually be designed to improve the well-being of doctors, especially in the aftermath of the global pandemic.

METHODS

This study was done using a cross-sectional survey. The sample size was calculated using correlation coefficient -0.52 from a previous study [20], 5% significance level and 95% confidence interval. Data were collected from early-career doctors working in Pakistan between March and May 2021 using convenience sampling. The inclusion criteria were that participants (i) were early career doctors (i.e. those working for 10 years or less) and (ii) were working for a minimum of past 6 months. Those currently under treatment for a psychiatric disorder were excluded. All participants were asked to complete an online questionnaire prepared using Google Forms and distributed through social media. Informed consent was taken from all participants. The survey included participants' sociodemographic characteristics (age, gender, marital status, education, job designation, total duration of work, work in COVID units) and psychometric scales i.e. Purpose in Life (PIL) test and Perceived Stress Scale (PSS). PIL test, developed by Crumbaugh & Maholick in 1964, is a self-rated scale intended to assess level of meaning in life. Each of the 20 items has a range from 1-5. Higher score indicates higher meaning. The Perceived Stress Scale (PSS) gauges the extent to which a person perceives their present circumstances as stressful. It is a 10-item scale with response range 0-4. To obtain the PSS scores, four positively worded items (4, 5, 7, and 8) are reversed, and results are totaled. Higher scores suggest higher perceived stress. Statistical analyses were performed using SPSS version 26.0. Quantitative variables were described with mean and standard deviation. Categorical variables were represented using frequencies and percentages. Cronbach's alpha was calculated to assess the internal consistency of each scale with an acceptable value above 0.7. Independent sample t-test and analysis of variance (ANOVA) were run to assess the impact of demographic characteristics on meaning and stress. Pearson's correlation coefficient was calculated with $p<0.05$ considered significant.

RESULTS

Average age of the participants was 27.45 ± 2.82 years and the average duration they had worked was 3.88 ± 2.62 years. Table 1 reveals that more women doctors (71.4%) participated in the study compared to men (28.6%). 59.4% were single and 37.8% married. Majority had MBBS as their highest qualification (90.8%) and were working as postgraduate trainees (46.5%). Over half had worked in or were working in COVID units (57.6%).

Baseline characteristics	Frequency (%)
Gender	
Female	155 (71.4%)
Male	62 (28.6%)
Marital status	
Single	129 (59.4%)
Married	82 (37.8%)
Separated	1 (0.5%)
Divorced	4 (1.8%)
Widowed	1 (0.5%)
Highest educational level	
MBBS	197 (90.8%)
BDS	4 (1.8%)
Postgraduate qualification	16 (7.4%)
Job designation	
House Officer	69 (31.8%)
Medical Officer	29 (13.4%)

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Postgraduate Trainee	101 (46.5%)
Consultant/Specialist	12 (5.5%)
Lecturer/Demonstrator	5 (2.3%)
Public Health Specialist	1 (0.5%)
Specialty	
Medicine & Allied	124 (57.1%)
Surgery & Allied	68 (31.3%)
Non-clinical specialties	7 (3.2%)
General Practice	13 (6.0%)
Dental specialties	5 (2.3%)
Worked/working in COVID Units	
Yes (Frontline Workers)	125 (57.6%)
No	92 (42.4%)

Table 1: Sociodemographic Characteristics

The Cronbach's α value for Perceived Stress Scale (PSS) was 0.85 and Purpose in Life (PIL) test was 0.93, which indicated good reliability of the scales administered. The mean score on PIL test was 67.64 ± 15.20 and PSS was 20.20 ± 5.88. To compare the mean PIL scores of males and females, as well as those of frontline workers and others, independent sample t-tests were used. In either comparison, there were no significant differences in PIL scores between the groups. Additionally, t-tests were used to compare the mean PSS scores between genders and frontline workers versus others. PSS scores differed significantly between males (18.82 ± 5.07) and females (20.75 ± 6.11); t (215) = -2.198, p=0.03. There were no significant differences in PSS scores between those who worked in COVID units and others. The effect of marital status, education, job designation, and specialty on PIL and PSS scores was compared using one-way ANOVA tests. There were no statistically significant differences in either score between the groups. Pearson correlation coefficient was calculated to assess the relationship between PIL and PSS scores, which showed significant negative correlation between the PIL and PSS, r (215) =-.610, p<0.01. r=-0.610 represents a large effect size. Age and the duration of work as a doctor showed a significant positive correlation with PIL scores, although the effect size was small, Table 2.

Variables	Age	Duration	PIL	PSS
Age	1	.844**	.202**	-.115
Duration	-	1	.175**	-.050
PIL	-	-	1	-.610**
PSS	-	-	-	1

Table 2: Correlations ** shows significance at the 0.01 level

DISCUSSION

The primary objective of the study was to assess the effect of meaning in life on the stress experienced by early career doctors working in Pakistan. A significant negative correlation was found between meaning in life and stress. This study supports the findings of the existing international literature. Ostafin et al., showed that meaning was inversely correlated with distress, r (88) = –.53, p < .001 [15]. Another local study looked at the same variables as the current study but the population investigated was medical students. The reported correlation coefficient was -0.52, p<0.05 [20]. The only other published study done on Pakistani doctors reported a significant negative correlation between perceived stress and psychological well-being among doctors. Even though this used the Ryff psychological well-being scale, it did not report the correlation between the purpose in life subscale and stress [21]. A local study found a higher mean PSS score 26.09 ± 8.141 and that stress correlated negatively with age and number of years at work, in contrast to this study. However, they also reported that woman doctors had significantly higher perceived stress scores compared to men and that the effects of marital status and specialty were not significant [22]. Similarly, Park and Baumeister showed that less current stress was described by those who had a greater meaning in life, r (153) = –0.28, p < 0.01 [23]. Hill et al., indicated that sense of purpose is not only associated with lower levels of perceived stress but also with decreased secretion of cortisol, even though the amount of daily stressors experienced remains constant. This may mean that meaning fosters an optimistic attitude and active coping [13]. The research conducted specifically on medical professionals points in the same direction. Moreno-Milan et al., [17] also reported that palliative care workers who found greater meaning in their work scored lower on the measure of perceived stress, increasing their satisfaction with life. Another study conducted on hospice nurses frequently dealing with mortality revealed the presence of meaning in life was associated with less stress, burnout and negative emotional states, and with more positive emotional states [16]. Even though it was not our primary aim to report on the level of stress in doctors and its relationship with demographic variables, an important finding was that female doctors were more stressed than male doctors but the genders did not differ significantly with respect to meaning in life. Moreover, older doctors with longer duration of career experienced greater meaning. Interestingly, marital status, educational attainment, job designation, specialty and frontline work in COVID-19 pandemic were found to have no significant difference effect on either variable. Another study from Faisalabad confirmed the higher degree of stress in female doctors but also suggested that being married was associated with greater stress [7]. Arif et al., [24] showed that house officers have the most stress, followed by medical officers or trainees, and consultants have the least. The differences with the present study may be explicable by sociodemographic and personality factors. To consider the strengths and limitations of the study

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presented, it has been especially useful as it opens a new avenue for research on the mental well-being of Pakistani doctors, since there were no other studies on the topic available. The sample included both genders with a wide distribution across job designations and specialties. However, correlational studies cannot conclusively prove the relationship between variables and self-reported measures can introduce bias. We hope that future research would rectify these shortcomings. The current time is significantly stressful for doctors, making such research the need of the hour, so that we have interventions in our arsenal that enable better stress management.

CONCLUSIONS

Experiencing higher meaning in life leads to lower perceived stress in early career doctors from Pakistan. Interventions that focus on meaning in life may help improve the well-being of doctors.

Conflicts of Interest

The authors declare no conflict of interest.

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