RESEARCH ARTICLE

Impact of perceived social support on psychological resilience: A comparison between medical and surgical postgraduate residents

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Abstract

Objective: To identify the predictable relationship and differences between perceived social support and psychological resilience among medical and surgical postgraduate residents.

Method: The analytical cross-sectional study was conducted from July to September 2021 at Dr Ruth K.M. Pfau Civil Hospital, Karachi, and comprised postgraduate medical and surgical residents of either gender. Data was collected using validated self-administered questionnaires. Data was analysed using SPSS 22.

Results: Of the 200 residents, 100(50%) were medical residents and 100(50%) were surgery residents. Besides, 161 (80.5%) were females and 39(19.5%) were males. The overall mean age was 27.57±2.13 years. Mean perceived social support score was 62.53±15.41 and mean score for psychological resilience was 70.40±13.73. Perceived social support was a significant predictor of resilience (p=0.0001). Medical residents scored significantly higher (p=0.034) on perceived social support compared to residents from surgery departments. Marital status, residency year, and birth order in the family significantly differed with reference to perceived social support and resilience (p<0.05).

Conclusion: There was a favourable role of perceived social support in building resilience among postgraduate residents.

Keywords: Social support, Psychological resilience, Internship and residents, Teaching hospital. (JPMA 74: 489; 2024)

DOI: https://doi.org/10.47391/JPMA.9252

Introduction

Positive education among postgraduate medical students is an emerging concern among researchers worldwide.[1,2] There has been a plethora of research addressing the elevated level of psychological distress and burnout among medical and surgical residents,[3-5] highlighting the need for positive education during residency training.[5] A meta-analysis[3] of residents from various world regions found a 57.18% prevalence of burnout in several Asian countries compared to 27.72% in several European countries. Moreover, General Surgery was among the top three specialties with elevated levels of burnout (58.39%). Research[4] indicated that surgical residents were exposed to more challenging tasks, stressful work environment and long working hours compared to medical residents.

The social support that a person receives from family, friends and society has a strong influence on academic achievement, education and mental health.[6] It is described as a social relationship transaction between individuals.[7] The trajectory of social support is both multidimensional and complex. That is why it has been conceptualised and measured in a variety of ways.[7,8] The most basic distinction is made between the assessment of received (structural) and perceived (functional) social support measures. Received social support measures are associated with the availability and existence of social relationships. Perceived social support measures address the cognitive component of social support by assessing the satisfaction with social relationships.[9] Rodriguez and Cohen[8] argued that perceived social support (PSS) is associated with increased emotional adjustment in stressful life experiences.

Researchers argue that social support operates in two ways to influence physical and psychological health. The first is direct effect model that suggests social support is directly associated with the improved sense of wellbeing irrespective of stressful life circumstances. The other is stress-buffering model that suggests social support protects people from the hazardous effect of stress, and improve wellbeing during stressful life circumstances. The stress buffering model is usually observed when social support is measured through perceived measures.[7,8]

Recent empirical evidence[1,5,10] suggests that PSS and psychological resilience (PR) are interrelated protective factors against mental distress, and improve work performance and wellbeing. Resilience refers to the ability to grow and find meaning in adverse events. This is defined as the ability to "bounce back" after experiencing adversity.[11] The manifestation of resilience after the experience of adversity can appear in a range potential

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Submission complete: 20-03-2023 **Review began:** 09-05-2023
Acceptance: 15-11-2023 **Review end:** 18-10-2023

patterns, such as no change in functioning despite experiencing adversity (buffering effect), initial short decline in functioning followed by recovery response to pre-adversity level, or post-traumatic growth in which one experiences positive growth that is higher than previous functioning.[12] The dimensions of resilience for professional development in medical education comprise learning self-control, improved self-efficacy, ability to learn from hardship, engaging in supportive and helping behaviour, and persistence.[13]

Garmezy et al.[14] identified three models of resilience with reference to its development. The compensatory model suggests a direct relationship between stress and positive personal attributes. In this model, the negative effect of stress is compensated by the positive personal attributes. The second is the challenge model which suggests that moderate level of stress exposure is associated with an opportunity to learn from stressors and practise self-efficacy. The third is the protective factor model, also known as the immunity-versus-vulnerability model, suggesting a conditional relationship between stress and protective factors with respect to positive adaptation.

There is ample evidence suggesting that resilience helps residents in coping efficiently with the stress experienced during medical training, such as high workload and achievement expectations.[1,5] It is evident that resilience is positively associated with family and institutions among medical residents.[5,15] However, there is lack of consensus in literature[5,16,17] regarding PR's relationship with demographic characteristics and training speciality.

There is limited empirical evidence[16,17] available on the psychological wellness of medical practitioners, specifically in the context of Pakistan. For example, it is not known what conditions promote positive mental health, and what factors make medical residents survive and develop professional competence despite being exposed to stressful working conditions. Postgraduate medical training for the sake of competence and the accompanying ability to improvise during uncertain situations is a serious challenge for medical institutions.[1,2] Modern pedagogical approaches recognise the need to build PR among young physicians during medical education training. However, this approach has rarely been used as a goal in professional development.[13]

The current study was planned to identify the predictable relationship and differences between PSS and PR among medical and surgical postgraduate trainees (PGTs). It was hypothesised that PSS would predict PR, and that medical and surgical PGTs will differ with respect to the level of PSS and PR.

Subjects and Methods

The analytical cross-sectional study was conducted from July to September 2021 at Dr Ruth K.M. Pfau Civil Hospital, Karachi (CHK). After approved from the ethics review board of the Dow University of Health Sciences (DUHS), Karachi, the sample size was calculated using OpenEpi[18] version 3.16, with two-sided significance level 95% and power 80%.[19] The sample was raised using purposive sampling technique. Those included were medical and surgical PGTs of either gender aged 24-40 years who were currently employed full-time at CHK with at least 6 months of residency experience. Those outside the age range, having <6 months of residency experience, having any medical or psychiatric condition, those who had completed their residency and were awaiting results, and those not willing to participate were excluded.

Data was collected after taking verbal and written informed consent from all the participants who were required to complete a three-stage questionnaire.

The first stage was related to demographic data, including gender, age, education, training department and hospital, training year, completed training duration, birth order in the family, marital status, family setup, monthly income, any diagnosed medical or psychiatric illness and significant stressors that they were currently experiencing in their lives.

To assess PSS, the self-administered validated Multidimensional Scale of Perceived Social Support (MSPSS)[7] questionnaire was used. It is a 12-item questionnaire with three subscales: family, friends, and others. The respondents were asked to rate their statements on a 7-point coding scheme, ranging from 1=very strongly disagree to 7=very strongly agree. The standard guidelines suggest there is no cut-off score to determine PSS level, but higher scores reflect high PSS level.

In the final stage, the validated Connor-Davidson Resilience Scale (CD-RISC)(20) was used to assess PR. It is a 25-item self-rating tool in which statements are rated on a scale of 0-4, with 0=not true at all, and 4=true nearly all the time. The total sum of scores on each item reflected PR level, with a higher score representing high PR level.

Data was analysed using SPSS 22. Psychometric properties of the 2 scales were identified through reliability analysis, including Cronbach's alpha value, mean, standard deviation, skewness, kurtosis, actual and potential values. Normality of data was checked using Shapiro-Wilk and Kolmogorov-Smirnov tests. Data was expressed as frequencies and percentage, or as mean±standard

deviation, as appropriate. Independent sample t-test and one-way analysis of variance (ANOVA) were applied to differentiate between medical and surgical PGTs' scores on MSPSS and CD-RISC. The overall predictive relationship of PSS and PR was assessed using linear regression, and the predictors of resilience were evaluated using multiple regression. P<0.05 was taken as statistically significant.

Results

The Cronbach alpha value of MSPSS was 0.920, indicating good internal consistency, and the value of skewness (0.004) and kurtosis (-0.306) reflected normal data distribution. The corresponding values for CD-RISC were 0.876, 0.087 and -0.078, indicating normal data distribution (Table 1).

Of the 200 residents, 100(50%) were medical PGTs and 100(50%) were surgery PGTs. Besides, 161(80.5%) were females and 39(19.5%) were males. The overall mean age was 27.57±2.13 years. Mean PSS score was 62.53±15.41 and mean CD-RISC score was 70.40±13.73. Medical PGTs scored significantly higher (p=0.034) on PSS compared to surgery PGTs. Married subjects showed a high level of PSS (p=0.006), while PR varied significantly in relation to the residency year (p=0.046) and was linked to birth order in the family (p=0.019) (Table 2).

Overall and with reference to medical and surgery PGTs, PSS appeared to be a significant predictor of PR (R2=0.128, t=5.385, p=0.0001), and the total explained variance in PR was 12.8% (Table 3).

Table-1: Psychometric properties of the scales used in the study.

Scales	No. of items	N	Mean±SD	α	Skewness	Kurtosis	Range	
							Actual	Potential
MSPSS	12	200	62.53±15.14	0.920	0.004	-0.306	12-84	12-84
CD-RISC	25	200	70.40±13.73	0.876	0.087	-0.078	29-98	0-100

MSPSS: Multidimensional scale of perceived social support; CD-RISC: Connor-Davidson Resilience scale-25, SD: Standard deviation, α: Cronbach alpha value.

Table-2: Correlation of demographic characteristics with MSPSS and CD-RISC scores (n=200).

Variables	Comparing postgraduate residents using MSPSS and CD-RISC				
	n (%)	MSPSS		CD-RISC	
		Mean±SD	p-value	Mean (SD)	p-value
Gender[a]					
Male	39 (19.5)	64.97±12.05	0.271	72.26±14.63	0.348
Female	161 (80.5)	61.94±16.09		69.95±13.51	
Birth Order[b]					
Only Child	6 (3)	60.33±12.84	0.850	74.33±15.29	**0.019****
First Born	56 (28)	61.18±15.53		68.89±14.31	
Middle Born	83 (41.5)	63.30±15.76		73.61±12.49	
Last Born	55 (27.5)	62.98±15.27		66.65±13.92	
Marital Status[b]					
Engaged	20 (10)	53.0±19.58	0.006**	65.90±14.10	**0.147**
Single	103 (51.5)	62.32±13.19		69.83±15.71	
Married	77 (38.5)	65.29±16.15		72.32±10.16	
Family type[a]					
Nuclear	107 (53.5)	63.35±13.11	0.423	69.58±14.65	0.366
Joint	93 (46.5)	61.59±17.72		71.34±12.61	
Departments[a]					
Medical	100 (50)	64.84±12.75	0.034**	71.09±13.76	0.479
Surgical	100 (50)	60.22±17.43		69.71±13.74	
Training Year[b]					
Residency year 1	61 (30.5)	63.57±14.40	0.790	67.82±14.54	0.046**
Residency year 2	41 (20.5)	63.32±12.20		73.20±12.17	
Residency year 3	54 (27)	60.39±16.07		68.93±15.50	
Residency year 4	38 (19)	63.45±19.71		74.68±10.79	
Residency year 5	6 (3)	60.00±8.62		63.67±3.38	

SD: Standard deviation, MSPSS: Multidimensional scale of perceived social support, CD-RISC: Connor-Davidson Resilience scale; [a]Independent sample t-test; [b]One-way analysis of variance (ANOVA); **Statistical significant p< 0.05

Discussion

The current study is among the few[16,17] addressing the role of PSS in predicting PR among PGTs. As initially hypothesised, PSS appeared to be a significant predictor of PR among both medical and surgical postgraduate residents. The finding coincided with literature.[21-23] A recent study[23] concluded that social support and resilience had buffering effect on demanding medical training life and anxiety.

The findings related to the second initial hypothesis revealed that medical residents scored significantly higher on SS than did surgical residents. However, no significant difference was observed between PR levels of the medical and surgical residents. It is evident from previous studies that during training, surgery residents report low level of support from mentor and colleagues as well as a sense of autonomy related to their job, which are important factors in terms of health and wellbeing.[24]

Research evidences on PGTs[25,26] identified a significant high level of burnout among residents from surgical specialities. That might be another factor for surgery residents to perceive low level of support compared to their medical counterparts.

The present study revealed that PR significantly differed with respect to the residency year. It was comparatively low during 1st, 3rd and final years of residency. One study[25] found a high level of resilience among 2nd year postgraduate residents.

With reference to the demographic characteristics, married residents perceived a high level of support from their social network. This is consistent with studies conducted earlier in Pakistani population.[27] Pakistani culture values strong familial support, which is in line with research conducted on married Indian migrants

Table-3: Summary of linear and multiple regression analyses for predictable relation of perceived social support with resilience among medical and surgical postgraduate residents.

Predictors	R2	Adjusted R2	B	SE	β	t-test	*p*-value
Perceived Social support (PSS) as a predictor of resilience among postgraduate residents (n=200)*							
(Constant)	0.128	0.123	50.48	3.80		13.25	0.0
PSS			0.319	0.059	0.357	5.385	0.0***
Predictors of resilience among medical postgraduate residents (n=100)**							
(Constant)	0.317	0.273	24.258	8.313		2.918	0.004
Gender			4.560	2.850	0.140	1.600	0.113
Training Year			0.786	0.988	0.072	0.796	0.428
Marital Status			-2.324	1.933	-0.111	-1.202	0.232
Birth order			-0.884	1.648	-0.054	-0.536	0.593
Family System			3.507	2.859	0.120	1.227	0.223
PSS			0.605	0.102	0.561	5.907	0.0***
Predictors of resilience among surgical postgraduate residents (n=100)**							
(Constant)	0.099	0.041	60.375	8.596		7.024	0.000
Gender			2.230	3.284	0.069	0.679	0.499
Training Year			-1.125	1.125	-0.103	-1.000	0.320
Marital Status			2.556	2.171	0.122	1.178	0.242
Birth order			-2.445	1.741	-0.151	-1.404	0.164
Family System			-0.240	3.231	-0.008	-0.074	0.941
PSS			0.183	0.078	0.232	2.346	0.021***

*Linear regression; **Multiple regression; ***$p<0.05$

living in the United Kingdom who also consider family as the main source of support.[28] In this context, the lines between family and spouse are often blurred, and family serves to validate marriage by accepting the relationship and helping them assert themselves as a couple.[29]

The current study further revealed that participants with middle and last birth orders differed significantly in terms of their PR level. The birth order of only children and middle-born residents appeared to be related to high resilience compared to first- and last-born residents. These findings are inconsistent with another study that found last-borns to be highly resilient.[30] However, due to limited literature available on this particular variable, further studies are needed to fully assess the contributing factors.

The current study has several limitations. One of the most prominent weaknesses is the lack of literature on the current topic in Pakistan's local context which hampered relevant comparison of the current findings. Moreover, the study was done at a single centre and was limited to PGTs. The study could have provided insightful findings by including a measure of perceived stress. Undergraduate, para-clinical, and non-clinical students could also be examined to obtain broad findings. Furthermore, the study was conducted during the active phase of coronavirus disease-2019 (COVID-19) and did not include any tool to measures psychological distress.

Despite the limitations, however, the present study provides evidence to promote positive training of residents. Resilience-oriented programmes to relieve stress and enhance wellbeing should be designed for the PGTs, especially for those working in highly stressful wards, like emergency, surgery and others. Special attention should be paid to the provision of social support by administration, mentors, consultants and colleagues. However, to reach this goal, institutions need to develop protective support systems, instead of leaving the matter to the faculty members.

Conclusion

There was a favourable role of PSS in building PR among PGTs. Medical and surgical residents did not differ with respect to PR. Medical institutions and training centres must build resilience through positive education as a goal of professional development.

Acknowledgment: We are grateful to undergraduate medical students of Dow University of Health Sciences (DUHS), Dr Javeria Waseem Ahmed and Dr Shoaib Siddiqui, for facilitating data collection and data management, and to the participating postgraduate residents.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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Author Contribution:

A: Conceptualization and design of the study, sample calculation, research proposal supervision, critically reviewed and all sections of the article.

AA: Conceptualization and designing of study, drafted discussion, involved in data collection, editing, redrafting and finalization.

KM: Conceptualization and designing of study, drafted result section, involved in data collection, editing redrafting.

MBA: Conceptualization and designing of the study, drafted introduction section, involved in data collection, editing, and redrafting.

SB: Conceptualization and designing of the study, drafted methods section of the article, involved in data collection, editing, redrafting and finalization.