

Burnout and Resilience of Internal Medicine Physician Trainees in a Tertiary Government Hospital in the Philippines during the COVID-19 Pandemic: A Mixed-method Study

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ABSTRACT

Objectives. Internal Medicine physician trainees faced unique challenges as the primary frontline physicians at a tertiary COVID-19 government referral center during the COVID-19 pandemic. This study examined the prevalence of burnout and resilience of these physician trainees during the early period of the pandemic, the determinants of burnout, and their sources of anxiety and coping mechanisms.

Methods. Using a mixed-methods approach, we conducted an online cross-sectional survey to measure burnout and resilience among 196 Internal Medicine physician trainees using the Maslach Burnout Index Human Services Survey for Medical Personnel and the Connor-Davidson Resiliency questionnaires, respectively. We then conducted virtual focus group discussions and in-depth key informant interviews to explore the trainees' sources of anxiety and coping mechanisms until thematic saturation was satisfied.

Results. Out of 146 respondents (from 196 eligible participants, 74% response rate), four percent of physician trainees fit the frank burnout profile, 40% were engaged, while the majority had intermediate profiles (23% ineffective, 28% overextended, and 4% disengaged). The mean resilience score was 72.9 (SD 12.4). Resilience was a significant negative predictor for burnout (Beta Coefficient = -0.73, $p < 0.001$). Its protective effect decreases in those with more exposure to patient deaths (Beta Coefficient = 6.767, $p < 0.05$). Significant sources of anxiety included changes in the practice of medicine (changes in workflow, working in full personal protective equipment, telemedicine and zoom fatigue, constant threat of acquiring the infection) and having competing demands between service and training. Coping mechanisms included preserving a haven, maintaining social relationships, and self-care.

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Conclusion. In the largest government hospital in the Philippines, four percent of Internal Medicine physician trainees had burnout, 40% were engaged, and the majority were at-risk for burnout a few months into the COVID-19 pandemic in 2020. Resilience reduces the risk for burnout. However, its protective effect decreased with exposure to a higher number of patient deaths per week.

Key Words: burnout, professional; COVID-19; resilience, psychological; physicians; pandemics

INTRODUCTION

On January 30, 2020, the first case of COVID-19 in the Philippines was identified by the local Department of Health. As the number of confirmed cases and deaths increased, one of the Philippines' largest public hospitals, the Philippine General Hospital (PGH), began operating as one of the country's COVID referral centers on March 30, 2020.¹ Our institution is a 1500-bed tertiary academic hospital that serves approximately 600,000 patients yearly.² Among its fifteen clinical departments that provide residency and fellowship training, the Department of Medicine is the largest. As a result of necessary workforce restructuring because of the pandemic, fellows and residents of Internal Medicine have been working at the forefront of providing medical care for moderate to critically ill COVID-positive patients. Our institution then allotted 110 beds in the wards and 20 beds in intensive care units (ICUs) for COVID-19 patients.² Over the next few months, the country's capital, Manila, was placed under the most extended lockdown in the world. However, the region's rapidly increasing number of COVID patients needing hospitalization, coupled with the growing number of medical staff getting infected with the virus, eventually overwhelmed the nation's health care system. Factors that increased anxiety and fear among health care workers also included the lack of proper personal protective equipment and perceived inadequate pay.³

Under normal circumstances, physician trainees already experience higher burnout levels than attending or consultant physicians and nonphysician, age-adjusted peers.⁴ Physician trainees are qualified physicians who undergo three to seven more years of training after medical school to be certified specialists. Work-related stressors unique to physician trainees include unpredictable patient workload, relative lack of control over their work environment, modest financial remuneration, and work-life conflicts.⁵ The COVID-19 pandemic presents new challenges to physician trainees, exacerbating their baseline risk for burnout.⁶ They serve at the frontlines and face a greater risk of infection compared to the general population. At present, they are expected to fulfill this service-centered role while continuing their medical training for professional development.^{2,7}

The significance of recognizing physician burnout lies in its downstream effects on both the physician and the patient. Burnout is associated with increased otherwise preventable medical errors, reduced professional work effort, lower patient satisfaction, longer recovery times, and higher in-hospital mortality rates.⁸ Identifying sources of burnout and how to prevent this will ultimately prove beneficial for both physician and patient welfare. Resilience is defined as one's ability to withstand adversity. Apart from addressing systemic and institutional factors, adequate resiliency and wellness training can significantly reduce burnout rates among resident physicians.⁹

There have been several studies focusing on the impact of COVID-19 on physician and healthcare worker mental health.¹⁰ However, limited data is available regarding the effects of the pandemic on Internal Medicine physician trainees. This study measured burnout and resilience among Internal Medicine physician trainees in the PGH during the COVID-19 pandemic. We also explored the predictive factors for burnout and the participants' COVID-19-related sources of anxiety and coping mechanisms.

MATERIALS AND METHODS

Study setting and participants

The PGH, a tertiary government hospital with a 1,500-bed capacity, was designated a COVID-19 referral center in March 2020. To address the increasing cases of moderate to critically ill COVID-19 positive patients, it temporarily suspended non-emergency, elective procedures, and outpatient services during the initial months of the pandemic. The hospital also quickly adopted a skeleton call schedule for all its personnel for infection control and logistic purposes. Doctors, nurses, and other health care staff were assigned to three teams. One team would go on week-long duties, followed by a mandatory two-week quarantine period. Medical residents and fellows, medical nurses, and ancillary staff provided the bulk of direct patient care at the COVID ICUs and wards.

We conducted this study at the PGH Department of Medicine from April to July 2020. All residents and fellows employed under the department between March to July 2020 and provided care for patients with COVID-19 during their training were eligible to participate in the survey and focus group discussions (FGDs). Since most of the FGD participants were male, we performed purposive sampling for key informant interviews (KIIs) to capture the experiences and insights of female physicians.

Study design

Using a sequential exploratory mixed-method approach, we conducted an anonymous web-based cross-sectional survey using the online platform, Survey Monkey, to gather data on demographics and the prevalence of burnout and resilience among the study participants. This was followed by a series of FGDs and KIIs to explore the context behind the surveys' results and identify the participants' sources of stress and coping mechanisms. Results from the quantitative surveys informed the questions used during the FGDs and KIIs.

Measures

Demographic data gathered included age, sex, employment status, level of training, daily sleep duration, frequency of exercise, alcoholic beverage intake, smoking behavior, number of patients per day, and patient mortalities per week. We assessed burnout using the Maslach Burnout

Index - Human Services Survey for Medical Personnel (MBI-HSSMP) questionnaire. It is a 22-item questionnaire using a six-point Likert scale that is considered the standard tool for measuring one's level of burnout through a combination of its three components: emotional exhaustion (defined as a chronic feeling of emotional fatigue and loss of energy or motivation), depersonalization (defined as developing a social detachment or loss of idealism), and low efficacy (low personal accomplishment or a sense of personal inefficiency). We computed individual total burnout scores by reversing the scores for statements about efficacy, then summing all the scores for the three components. The scores range from 0-54 for emotional exhaustion, 0-30 for depersonalization, 0-48 for efficacy, and 0 to 132 for total burnout, with higher scores indicating higher levels of burnout.¹¹ Although the MBI-HSSMP has not yet been validated among Filipinos, we opted to use this tool in our study because it is widely used in practice and is tailored specifically for health workers. Its internal consistency for burnout was desirable, with Cronbach's alpha at 0.90. Each subscale also had good internal consistency (exhaustion $\alpha=0.925$, depersonalization $\alpha=0.752$, personal accomplishment $\alpha=0.77$). Cut-off scores for defining who has burnout and who does not may have no diagnostic validity. Hence, we measured the prevalence of burnout through five burnout profiles (Engaged, Ineffective, Overextended, Disengaged, and Burnout profiles) as defined by Leiter and Maslach (2016).¹² This nuanced method identifies specific patterns of the three burnout components along the burnout-engagement continuum unique to each burnout profile.¹² This person-centered approach was created to better understand, and represent individual workers' experiences. Persons with low scores for all three domains of burnout (exhaustion, depersonalization, and inefficiency) exhibit the engaged profile. The other end of the spectrum is patients with burnout, where all three domains are elevated. Intermediate to these two extremes are the disengaged (high depersonalization), overextended (high exhaustion), and ineffective profiles (high inefficiency).¹²

We measured resilience through the Connor-Davidson Resiliency Score (CD-RISC 25), a validated 25-item tool using a five-point Likert scale that measures one's capacity to cope with stress. Scoring ranged from zero to 100, with higher scores reflecting greater resilience.¹³ We computed the participants' mean scores and compared them with CD-RISC 25 scores of several population studies. Our literature review also did not reveal any validation studies of the CD-RISC 25 done in the Philippines.

We sent a link to the web-based survey to all Internal Medicine physician trainees ($n=196$) via the instant messaging applications, Telegram and Viber. Completion of the online survey questionnaire implied consent.

We then contacted respondents who expressed their interest in participating in the FGDs and KIIs after the web-based survey. Due to physical distancing protocols, we conducted all FGDs and KIIs online through the application,

Zoom. Two facilitators trained in conducting FGDs set up password-protected online meetings. They secured informed consent from all the participants at the start of each FGD or KII. All FGDs and KIIs were audio and video recorded. Recordings were transcribed verbatim. Thematic saturation was reached after four FGDs, with a total of 15 participants and four KIIs.

Analysis

We performed statistical analysis using licensed STATA version 15 software. We evaluated significant differences in resilience and burnout scores according to demographics and work-related characteristics through the independent t-test or one-way analysis of variance (ANOVA). We used Wilcoxon rank-sum and Kruskal-Wallis nonparametric tests for differences in efficacy (found to be a non-normal variable). We also performed multiple linear regression analyses to explore the predictors for burnout. For all analyses, p -values <0.05 were considered statistically significant.

Two authors independently and inductively coded deidentified transcriptions of the FGDs and KIIs using licensed NVIVO 12 software. All the authors iteratively discussed the codes and themes to create a consensus regarding the coding framework. Informal member check validation was performed after identifying central themes and sub-themes. Direct illustrative quotations from the participants were included to supplement the themes identified. Individual participants are identified using pseudonyms.

Ethical Considerations

This study was reviewed and approved by the University of the Philippines Manila Research Ethics Board (UPMREB 2019-537-01). No ethical issues were encountered during the conduct of this study.

RESULTS

Seventy-four percent (146/196) of the eligible Internal Medicine physician trainees in PGH completed the survey, and 19 participated in the FGDs or KIIs. The characteristics of the survey participants and FGD or KII participants are shown in Tables 1 and 2, respectively.

Burnout

Out of 146 respondents, 59 (40.4%) were engaged, 34 (23.3%) were ineffective, 41 (28.1%) were overextended, 6 (4.1%) were disengaged and 6 (4.1%) had burnout (Figure 1). The mean total burnout score was 49.2 (SD 19.0), while the mean scores for emotional exhaustion, depersonalization, and efficacy were 26.4 (SD 11.6), 10.1 (SD 5.7), and 35.3 (SD 6.2), respectively.

Residents had worse scores compared to fellows across all components of burnout, with depersonalization (12.0 vs 9.1; $p = 0.004$), efficacy (33.5 vs 36.3; $p = 0.007$), total

Table 1. Characteristics of survey participants

Background Characteristics	n	%
Employment status		
Resident	51	34.9
Fellow	95	65.1
Age, in years (Mean ± SD)		
20-24	3	2.1
25-29	56	38.4
30-34	70	48.0
≥35	17	11.7
Sex		
Male	76	52.1
Female	70	48.0
Year level		
1 st	54	37.0
2 nd	39	26.7
3 rd	23	15.8
Graduating (if fellow)	30	20.6
Relationship status		
Non-married	113	77.4
Married	33	22.6
Sleep duration per day		
<8 hours	132	90.4
≥8 hours	14	9.6
Physical activity		
Does not exercise	50	34.3
Does exercise	96	65.7
Drinking alcoholic beverages		
No	70	48.0
Yes	76	52.0
Smokes cigarette		
No	143	98.0
Yes	3	2.1
No. of patients handled per day		
1-10	59	40.4
11-20	62	42.5
≥21	25	17.2
Ave. No. Of patient mortalities per week		
<3	108	74.0
≥3	38	26.0
Total	146	100.0

burnout (54.4 vs 46.5; $p = 0.017$) and resilience (69.2 vs 74.8; $p = 0.009$) reaching statistical significance.

The youngest trainees (20 to 24 years of age) had higher mean scores for depersonalization (14.3 vs 8.1-11.6; $p = 0.029$) and overall burnout (56.3 vs 45.0-54.6; $p = 0.037$) compared to older trainees. Female respondents also had worse mean scores in all three components of burnout than males, with exhaustion reaching statistical significance (28.3 vs. 24.4; $p = 0.040$). Finally, participants with three or more patient mortalities in a week had higher mean scores for emotional exhaustion (28.3 vs 25.8; $p = 0.262$), depersonalization (12.6 vs 9.3; $p = 0.002$), and burnout (54.4 vs 47.4; $p = 0.053$) compared to those with less patient

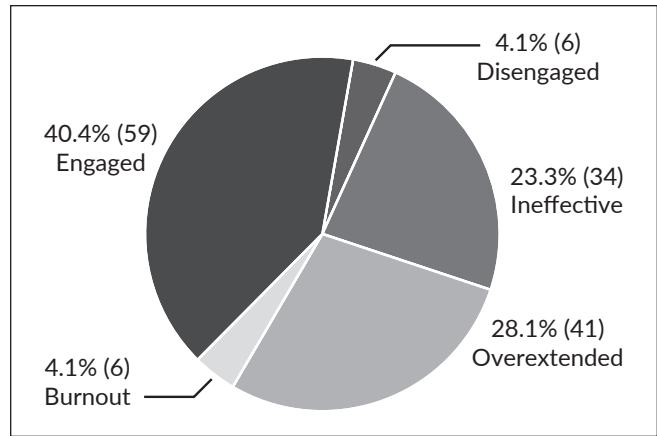


Figure 1. Burnout profiles among Philippine General Hospital, Department of Medicine residents and fellows during the COVID-19 Pandemic.

Table 2. Characteristics of FGD and KII participants

Age Group	Residents		Fellows		Parents	
	Male	Female	Male	Female	Yes	No
25-29	5	4	2	0	1	10
30-34	-	-	4	4	2	6

mortalities (Table 3). This was supported by our qualitative data, which revealed that the rising number of mortalities experienced every week, compounded with having to disclose unfortunate news to relatives over the phone, added to the emotional stress of the physicians as they also witnessed the grief of their patients’ families. As Nancy (28 years old, in her second year of residency) here described:

“When we disclose the patient’s death to relatives, you either hear only silence on the other line or crying and screaming. Sometimes they also get mad at you, which I understand. I feel like the closure is not complete for the family because they don’t get to see their deceased loved one during their last moments”.

Others would isolate their emotions when facing mortalities. Jonathan (27 years old, a second-year resident) shared how he would

“...try not to care. I try to give my best efforts as much as I can, but I tell myself that I should not give my all. I know that the mortality in the ICU is very high”.

Resilience

The mean resilience score was 72.9 (SD 12.4). Fellows had higher mean scores for resilience (74.8 vs. 69.2; $p = 0.009$) than residents. Non-smokers also had higher resilience scores compared to smokers (18.5 vs. 12.1; $p = 0.044$).

Predictors of Burnout

Resilience is a strong negative predictor for burnout (beta coefficient = -0.805, $p < 0.001$, CI: -1.006 to -0.604).

Nearly 30% of the variation in burnout scores is explained by resilience alone (Table 4). The effect estimates of resilience decreased from a beta coefficient of 0.80 (unadjusted) to -0.73 ($p < 0.001$, CI: -0.940 to -0.529) after adding work-specific characteristics (i.e., employment, number of patients handled, mortalities per week). Having an average of three or more patient mortalities per week was a significant positive predictor of burnout in the full model (beta coefficient 6.767, $p < 0.05$, CI: 0.644 to 12.890). Together,

resilience and having three or more patient mortalities per week contributed to a significant proportion of the variance in burnout scores (adjusted R-square of 32.7%).

Sources of Anxiety

Table 5 presents two significant themes that emerged as the participants' sources of anxiety: 1) changes in the practice of medicine and 2) competing demands between service and training.

Table 3. Burnout and resilience scores of respondents by demographic and work-related characteristics (N=146)

Background Characteristics	Exhaustion*			Depersonalization*			Efficacy**			Burnout*			Resilience*			N of Cases
	Mean	SD	P	Mean	SD	P	Mean	SD	P	Mean	SD	P	Mean	SD	P	
All respondents	26.4	11.6		10.1	5.7		35.3	6.2		49.2	19.0		72.9	12.4		146
Employment status																
Resident	27.8	9.7	0.286	12.0	5.5	0.004	33.5	6.0	0.007	54.4	15.7	0.017	69.2	12.1	0.009	51
Fellow	25.7	12.5		9.1	5.6		36.3	6.1		46.5	20.1		74.8	12.1		95
Age, in years																
20-24	29.0	5.6	0.138	14.3	6.8	0.029	35.0	11.4	0.129	56.3	20.6	0.037	66.3	16.7	0.059	3
25-29	28.8	10.2		11.6	4.9		33.8	5.9		54.6	15.2		69.8	11.8		56
30-34	24.1	12.3		9.3	5.9		36.4	6.5		45.0	20.9		75.5	12.7		70
≥35	27.7	13.1		8.1	6.1		35.8	3.9		47.9	18.7		73.1	10.5		17
Sex																
Male	24.4	11.0	0.040	9.7	5.5	0.384	35.8	6.7	0.379	46.3	18.7	0.072	74.0	11.0	0.447	76
Female	28.3	12.0		10.5	5.9		34.9	5.7		52.0	19.0		71.8	13.5		70
Year level																
1 st	25.1	11.8	0.364	9.3	5.6	0.051	36.4	5.9	0.062	46.1	18.8	0.076	72.2	12.2	0.257	54
2 nd	27.0	11.5		10.3	5.9		33.5	6.2		51.7	20.4		72.3	12.1		39
3 rd	30.0	11.0		13.0	5.0		34.1	6.8		56.9	16.3		70.1	13.7		23
Graduating (if fellow)	25.3	11.8		9.2	5.7		36.7	5.6		45.9	18.2		77.0	11.7		30
Relationship status																
Non-married	26.9	11.6	0.330	10.5	5.5	0.108	35.0	6.4	0.290	50.5	18.7	0.155	72.3	12.2	0.277	113
Married	24.7	11.6		8.7	6.2		36.3	5.5		45.1	19.9		74.9	13.1		33
Sleep duration per day																
<8 Hours	26.5	11.7	0.734	35.6	5.7	0.762	10.1	5.7	0.065	49.0	18.8	0.631	73.3	12.3	0.212	132
≥8 Hours	25.4	11.0		32.4	9.4		10.6	6.2		51.6	21.3		68.9	12.6		14
Physical activity																
Does not exercise	28.5	12.6	0.115	10.9	5.4	0.253	35.5	5.1	0.789	51.9	2.7	0.224	71.4	12.3	0.238	50
Does exercise	25.3	11.0		9.7	5.8		35.2	6.7		47.9	1.9		74.1	13.3		96
Drinking alcoholic beverages																
No	27.9	11.7	0.138	10.4	5.9	0.546	35.3	6.2	0.915	51.1	19.0	0.262	72.0	11.2	0.410	70
Yes	25.1	11.4		9.9	5.5		35.4	6.2		47.5	19.0		73.7	13.4		76
Smokes cigarette																
No	26.3	11.5	0.301	10.0	5.7	0.072	35.3	6.2	0.779	49.0	18.8	0.206	73.2	12.1	0.044	143
Yes	33.3	18.5		16.0	5.2		34.3	4.0		63.0	27.7		58.7	18.5		3
No. of patients handled per day																
1-10	26.9	10.7	0.205	10.6	4.8	0.484	35.1	6.1	0.180	50.4	17.2	0.137	70.8	12.0	0.084	59
11-20	27.5	12.3		10.1	6.1		34.7	5.9		50.9	19.5		72.7	12.9		62
≥21	22.7	11.7		9.0	6.6		37.4	6.9		42.4	20.9		78.2	10.8		25
Ave. no. of patient mortalities per week																
<3	25.8	11.7	0.262	9.3	5.4	0.002	35.6	6.1	0.310	47.4	19.2	0.053	72.9	12.8	0.987	108
≥3	28.3	11.3		12.6	5.9		34.4	6.4		54.4	17.9		72.8	11.2		38

Abbreviations: SD – standard deviation, P – p-values

* One-way analysis of variance (ANOVA) or independent t-test was used.

** Jarque-Bera test of normality was employed, and the test indicates that efficacy is not normally distributed; hence, nonparametric Kruskal-Wallis test or Wilcoxon rank-sum test was used.

Table 4. Multivariate regression models for predictive factors for burnout

Variable	Model 1			Model 2			Model 3		
	β	95% CI		β	95% CI		β	95% CI	
Constant	108.12	93.17	123.06	115.09	80.89	149.28	112.20	77.88	146.51
Resilience (CD RISC-25)	-0.805	-1.006	-0.604**	-0.763	-0.968	-0.557**	-0.734	-0.940	-0.529**
Age (in years)				-0.524	-1.711	0.663	-0.516	-1.706	0.673
Sex (ref = Male)									
Female				4.066	-1.213	9.345	4.342	-0.916	9.601
Year level (ref = 1st year)									
2 nd year				5.649	-1.133	12.432	4.723	-2.275	11.721
3 rd year				8.173	-0.505	16.851	7.212	-1.619	16.043
Outgoing				4.559	-3.032	12.150	4.124	-3.590	11.839
Employment status (ref = Resident)									
Fellow				0.145	-8.714	9.039	0.163	-9.018	9.307
No. of patients handled (ref = 0-10)									
11-20							0.127	-5.796	6.049
≥21							-5.101	-13.266	3.064
Ave. mortalities per week (ref = <3)									
≥3							6.767	0.644	12.890*
Prob> F		<0.001			<0.001			<0.001	
Adjusted R-square		0.298			0.312			0.327	
No. of cases		146			146			146	

*significant at p<0.05, ** p<0.001.

Table 5. Sources of anxiety and coping mechanisms among FGD and KII participants

Sources of anxiety	Coping mechanisms
I. Changes in the Practice of Medicine	I. Preserving a Haven
1. Changes in workflow	II. Maintaining Social Relationships
2. Working in full personal protective equipment	III. Self-care
3. Telemedicine and zoom fatigue	
4. Constant threat of acquiring and transmitting the disease to family	
II. Competing Demands between Service and Training	
1. Disruption of specialty training	
2. Research requirements	

1) Changes in the Practice of Medicine

Changes in Workflow

Most participants expressed their anxiety and unfamiliarity with the new work environment and patient cases. Robert (42 years old, a graduate fellow) described how some healthcare providers had to quickly re-learn medical procedures outside of their usual practice:

“When we transitioned into COVID teams, some fellows had to suddenly handle critical patients with COVID and other medical problems. For some, it had been years since they took care of intubated patients and assisted during codes”.

Working in Full Personal Protective Equipment (PPE)

While adhering to PPE-related protocols is necessary, fellows and residents consider it a significant source of

anxiety. Wearing PPEs can be physically tiring, uncomfortable, and even painful. Kim, 29 years old, in her third year of residency, shared:

“I’m wearing glasses, so fogging is always a problem. I have to take note of how I breathe — I shouldn’t exert. I also shouldn’t stay near the aircon or somewhere cold even if it’s more comfortable. Because I don’t stay in a cold area, I sweat. It’s like I’m in a sauna for eight hours.”

PPEs also conceal the face of healthcare providers, making it difficult for them to communicate and establish rapport with patients and other staff. Auscultation of the use of stethoscopes is less prioritized or even physically near-impossible to do since participants would be hard of hearing while wearing their PPEs.

Telemedicine and Zoom Fatigue

To comply with social distancing precautions, outpatient clinics shifted to telemedicine consults. Participants pointed out how poor internet connection and the lack of technical skills of either patient or physician would hamper efficient consultation. Physicians also worry about accountability or ensuring that good, ethical, and sound judgments are made based on an “impersonal platform devoid of essential physical examination” (James, 27 years old, first-year resident). Whether for professional or personal reasons, participants frequently mentioned online meetings as a source of exhaustion. Participants noted how official meetings can easily extend beyond office hours and how merging work and home space can cause “zoom fatigue”.

Fear of Acquiring and Transmitting the Disease to Family

Another source of anxiety for participants was the constant threat of being infected by the virus and subsequently infecting one's family. As a result, the majority have refrained from visiting their families during the pandemic. Some have decided to avail the of hospital-subsidized lodging at nearby apartments temporarily to protect their family.

2) Competing Demands between Service and Training

Disruption of Specialty Training

Many participants cited how their training had been compromised during the pandemic because of the restrictions imposed on face-to-face meetings. For instance, most consultant-led wards rounds were shifted to virtual rounds for safety reasons. This decreased opportunities for the trainees to engage directly with seasoned clinicians at the patient's bedside and receive immediate feedback. Elective rotations outside of the institution were prohibited, outpatient subspecialty clinics were suspended, and procedural training such as bronchoscopy and screening colonoscopy was limited. These resulted in less exposure to patients needing specialty care, a component considered integral to the curriculum of residency and fellowship. Furthermore, some trainees found themselves spending more time on administrative, clerical, and logistical tasks. Joaquin, a 31-year-old first-year fellow, shared,

"We spend hours in front of our computers and tablets and only minutes with our patients."

Research requirements

Some participants expressed concern that they may not be able to complete their required research work before graduation. Suspended outpatient clinics and reduced non-COVID patient cases precluded the implementation of some trainees' original research protocols. As a result, most abandoned their original research plans to conduct complete COVID-related research instead. This required new applications for technical and ethical review and approval.

Coping Mechanisms

Table 4 presents three significant themes for coping mechanisms that emerged from the FGDs and KIIs: 1) preserving a haven, 2) maintaining social relationships, and 3) self-care.

1) Preserving a Haven

Two participants shared how they set up strict rules and disinfecting stations at work and home. Robert, a 42-year-old graduate fellow, shared how they

"have a system and set of rules at home too. I have to follow them so that I can go home to my wife and kid."

Another participant (James, 27 years old, a first-year resident) shared how the department mandated that before

entering their on-call room, residents had to shower and change their clothes if they had previously entered areas of the hospital restricted to serving patients with COVID. Adding these extra precautions made them feel safer from acquiring the infection at work. Preserving this haven at work and at home essentially became a social responsibility. Another participant shared how they quickly became accustomed to the rules since they did these measures daily. As James also shared:

"Keeping our on-call room safe became our priority. This was necessary to keep our batchmates safe, as well as our families".

2) Maintaining Social Relationships

Many participants identified the use of social media to maintain social relationships with their workmates, friends, and family as their primary form of coping. Participants shared how they would watch movies; television shows through video sharing.

3) Self-care

Finally, the participants emphasized the importance of dedicating time to self-care by finding new recreational activities and rediscovering old hobbies. These activities included exercise, taking care of their pets or their plants, baking and cooking, watching movies and reading novels, and even housekeeping. Time for the self also included limiting their exposure to social media and technology, in general.

DISCUSSION

During the initial months of the pandemic in the PGH, the majority of the Internal Medicine physician trainees had intermediate at-risk profiles for burnout (disengaged, overextended, or ineffective profiles), four percent fit the burnout profile and 40% included the ideal, engaged profile.

According to a review by Patel et al., burnout was previously seen as a phenomenon that occurs late in one's career.¹⁴ However, our study revealed that the youngest trainees had higher mean scores for depersonalization and overall burnout. Similarly, residents also had higher mean scores for overall burnout and depersonalization and lower self-efficacy scores than fellows. Recent studies by Patel et al., Ishak et al., and Murali et al. consistently show that fewer years of practice and younger age are associated with higher rates of burnout.¹⁵⁻¹⁷ This can result from younger trainees and residents having limited autonomy, less experience with time management, and longer working hours.¹⁵ Furthermore, because of their complex role in the pandemic as frontline care providers and trainees, they are now incredibly vulnerable to burnout.¹⁸ In a review by Patel et al., women also had higher scores for exhaustion. This may result from household conflicts and caregiver responsibilities and their roles and responsibilities as healthcare workers.¹⁴

Resilience has been characterized as a trait that develops as a protective tool against workplace adversity, including burnout.^{19,20} Our results demonstrated that resilience is a strong negative predictor for burnout, similar to other studies.²¹ Our study population's resilience score (mean of 72.9) was also relatively higher than similar populations in other countries. Using the same scale for resilience, Sood et al. (2011) described how 40 internal medicine physicians in a tertiary center in the United States had a baseline resilience score of 69.6.²² McFarland and Roth (2016) also had similar results with a group of resident physicians having a mean resilience score of 68.5.¹³ Resilience is a Filipino cultural tendency. Filipino resiliency comes from deep spirituality, familial support, and a generally good disposition in life.²³ The physician trainees in our institution may have had even higher resilience scores before the COVID-19 pandemic. However, there were no prior studies that explored our population's baseline resilience scores. Our study's multiple regression analysis demonstrated how the protective effect of resilience could decrease when physicians are exposed to a higher number of patient mortalities. Increased and prolonged exposure to deaths is a risk factor for moral distress in medical professionals and subsequently leads to higher emotional exhaustion and depersonalization.²⁴

Subthemes that emerged after exploring the physician trainees' sources of anxiety included changes in workflow, working in full PPEs, and the fear of acquiring and transmitting the disease to family. Similarly, a qualitative study by Liu et al. (2020) in China found that the most common stressors of doctors and nurses during the pandemic include navigating changes in their work environment and assignments, working under heavy protective gear, and the fear of becoming infected and infecting others.²⁵ These are typical worries shared by physician trainees and other frontline health care workers during the pandemic.⁵ One subtheme identified in our study and uniquely experienced by physician trainees is the disruption of specialty training.^{2,5,26,27} Internal Medicine residency and subspecialty fellowship training in the Philippines follows competency-based frameworks set by the Philippine College of Physicians and the respective specialty organizations for fellowship programs.²⁵ Similar to other institutions globally, usual activities that promote learning such as regular bedside rounds, outpatient services, exposure to subspecialty clinics, and procedural training have been temporarily suspended.^{5,6,26} Teaching activities such as regular conferences, case reviews, and even patient endorsements were shifted online.²⁷ Similar to our participants, other physician trainees, had to extend their duties beyond the scope of medicine because of the skeleton workforce. Residents in New York had to learn to become donation coordinators, therapists, and floor managers during the pandemic.²⁸

Coping mechanisms most commonly employed by participants in this study include preserving a haven, maintaining social relationships, and dedicating time for self-

care. These are functional coping mechanisms that improve the individual resilience of health workers. Enhanced self-care such as good sleep hygiene and regular exercise increase vigilance and ensure peak performance.¹⁸ Evidence also suggests that clinicians with robust social support systems personally and professionally have lower risks for depression and burnout. This may explain our results showing married participants with lower overall burnout scores and higher resilience than unmarried participants.

Moreover, regular and well-informed safety practices at work can become deeply embedded habits, eventually reducing one's sense of disruption.²⁹ In terms of potentially harmful coping techniques, 2.1% and 52% of study participants admitted to smoking and drinking alcoholic beverages, respectively. These practices, however, were not explicitly mentioned in our FGDs or KIIs as coping mechanisms.

This study emphasized the need to prevent and recognize physician burnout to improve patient outcomes and physician satisfaction and fulfillment. Contrary to earlier beliefs where burnout was associated with older, more seasoned physicians, our results suggest that younger trainees are more prone to burnout, particularly in the depersonalization domain. Apart from addressing system-wide, operational factors, training committees may also focus on increasing trainee resiliency: by accommodating self-care practices by limiting hours on-duty or discouraging overtime activities; by providing clean and comfortable on-call rooms where trainees can seek respite. Opportunities for strengthening relationships among peers and with superiors and consultants may also improve trainee resiliency. As mentioned during our FGDs and KIIs, our participants feel that the pandemic has vastly impaired their training. Reassurance from their superiors may benefit them and lessen their anxiety. Mechanisms for trainees who are experiencing symptoms of burnout should also be available through mentoring and professional counseling.

Limitations and Recommendations

This study has several limitations. The pandemic has not ended, and the cross-sectional nature of this study does not reflect the evolution of the population's burnout experience. This study was also conducted during the early months of the pandemic. Longitudinal surveys will be needed to explore the long-term impact of the pandemic and the department's interventions for trainee well-being. Furthermore, the sources of stress and coping mechanisms identified during the focus groups and interviews were not analyzed quantitatively. Future studies may consider quantifying these to conclude their overall impact on the burnout experience and the implication of the ongoing pandemic on the resilience of the involved physicians. This study was also conducted in a single institution, focusing on only one specialty of physician trainees. Our results may not be generalizable to other medical specialties and institutions within and outside of the Philippines. Hence, we recommend future studies to include other healthcare workers (e.g., attending physicians,

nurses, and other allied health professionals) to explore the implications of the COVID-19 pandemic on the burnout and resilience of all healthcare workers. Finally, we attempted to explore the gender-sensitive perspective of burnout and the potential unique coping strategies and sources of stress by conducting KIIs on women. However, we were unable to yield any results as the number of women in the study population with caregiver roles at home was limited.

CONCLUSION

Understanding how the pandemic affects internal medicine physician trainees must be prioritized so that quality health care services may be sustained throughout and beyond COVID-19. In a tertiary government hospital in the Philippines, four percent of Internal Medicine physician trainees fit the frank burnout profile, 40% were engaged, and the majority had intermediate at-risk profiles a few months into the COVID-19 pandemic. The mean resilience score of the study participants was relatively high at 72.9 (SD 12.4). Resilience reduces the risk for burnout (beta coefficient = -0.73, $p < 0.001$), however, its protective effect decreases with exposure to a higher number of patient deaths per week. Common sources of anxiety that may impact burnout during this time include changes in workflow, working in full personal protective equipment, telemedicine, zoom fatigue, the constant threat of acquiring the disease, disruption of specialty training and research requirements. Meanwhile, coping mechanisms commonly utilized include preserving a haven, maintaining social relationships, and self-care.

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Statement of Authorship

All authors participated in the data collection and analysis and approved the final version submitted.

Author Disclosure

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REFERENCES

1. Llaneta C. UP-PGH is designated as COVID-19 referral hospital for NCR. [Internet]. 2020 [cited 2021 Jan]. Available from: <https://up.edu.ph/up-pgh-is-designated-as-covid-19-referral-hospital-for-ncr>.

2. Legaspi G, Omar A, Baticulon R, Salonga A, Gaddi M, Hong M, et al. Letter to the editor: service and training during the COVID-19 pandemic – perspectives from a neurosurgical center in the Philippines. *World Neurosurg*. 2020 May; 139: 741-3. doi:10.1016/j.wneu.2020.05.138.
3. Biana H, Joaquin J. COVID-19: The need to heed distress calls of healthcare workers. *J Public Health*. 2020; 853-853. doi:10.1093/pubmed/fdaa145.
4. Dyrbye L, West C, Satele D, Boone S, Tan L, Sloan J, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Acad Med*. 2014; 89(3):443-51. doi:10.1097/ACM.000000000000134.
5. Gregory E. Resident physicians' mental health during COVID-19: advocating for supports during and post pandemic. *Can Med Educ J*. 2020; 11(6): e188-e190. doi:10.36834/cmef.70493.
6. Kahwash B, Deshpande D, Guo C, Panganiban C, Wangberg H, Craig T. Allergy/immunology trainee experiences during the COVID-19 pandemic: AAAAI work group report of the fellows-in-training committee. *J Allergy Clin Immunol Pract*. 2021;9(1):1-6. doi:10.1016/j.jaip.2020.09.036.
7. Lu, D. Factors associated with trainee physician burnout. *JAMA Netw Open*. 2020;3(8):e2014345. doi:10.1001/jamanetworkopen.2020.14345.
8. Kumar, S. Burnout and doctors: prevalence, prevention and intervention. *Healthcare*. 2016; 4(3):37. doi:10.3390/healthcare4030037.
9. Dahn H, McGibbon A, Bowes D. Burnout and resiliency in Canadian oncology residents: a nationwide resident and program director survey. *Pract Radiat Oncol*. 2018; 9(1):118-25. doi.org/10.1016/j.prro.2018.08.001.
10. Fiest K, Leigh J, Krewulak K, Plotnikoff K, Kemp L, Ng-Kamstra J, et al. Experiences and management of physician psychological symptoms during infectious disease outbreaks: a rapid review. *BMC Psychiatry*. 2021;21(91). doi:10.1186/s12888-021-03090-9.
11. Maslach C, Jackson S, Leiter M, Schaufeli W, Schwab R. *Maslach Burnout Inventory Manual*. 4th ed. Mind Garden Inc; 2016.
12. Leiter M, Maslach C. Latent burnout profiles: a new approach to understanding the burnout experience. *Burn Res*. 2016;3(4): 89-100. doi:10.1016/j.burn.2016.09.001.
13. Davidson, J. Connor-Davidson Resilience Scale (CDRISC) Manual; 2018; www.cdrisc.com. Accessed January 20, 2020. Unpublished.
14. Patel R, Bachu R, Adikey A, Malik M, Shah M. Factors related to physician burnout and its consequences: a review. *Behav Sci*. 2018; 8(11):98. doi: 10.3390/bs8110098.
15. Ishak W, Lederer S, Mandili C. Burnout during residency training: a literature review. *J Grad Med Educ*. 2009;1(2):236-242. doi:10.4300/JGME-D-09-00054.1.
16. Murali K, Banerjee S. Burnout in oncologists is a serious issue: what can we do about it. *Cancer Treat Rev*. 2018; 68:55-61. doi:10.1016/j.ctrv.2018.05.009.
17. Kannampallil T, Goss C, Evanoff B, Strickland J, McAlister R, Duncan J. Exposure to COVID-19 patients increases physician trainee stress and burnout. *PLoS One*. 2020; 5(8). doi:10.1371/journal.pone.0237301.
18. Heath C, Sommerfield A, Von Ungern-Sternberg B. Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: a narrative review. *Anaesthesia*. 2020; 75: 1364-71. doi:10.1111/anae.15180.
19. Fletcher D, & Sarkar M. Psychological resilience: A review and critique of definitions, concepts, and theory. *Eur Psychol*. 2020;18(1): 12-23. doi:10.1027/1016-9040/a000124.
20. McCain R, McKinley N, Dempster M, Campbell W, Kirk S. A study of the relationship between resilience, burnout and coping strategies in doctors. *Postgrad Med J*. 2017; Epub ahead of print. doi: 10.1136/postgradmedj-2016-134683.
21. Mosheva M, Hertz-Palmor N, Ilan S, Matalon N, Pessach I, Afek A, et al. Anxiety, pandemic-related stress and resilience among physicians during the COVID-19 pandemic. *Depress Anxiety*. 2020; 37(10):965-97. doi: 10.1002/da.23085.

22. Sood A, Prasad K, Schroeder D, Varkey P. Stress management and resilience training among the department of medicine faculty: a pilot randomized clinical trial. *J Gen Intern Med.* 2011;26(8):858-61. doi: 10.1007/s11606-011-1640-x.
23. Gripaldo RM. Pilipino cultural traits: understand the Filipino philosophy of resiliency: katatagang-loob and its phenomenological considerations. Ateneo de Manila University.
24. Wallace C, Wladkowski S, Gibson A, White P. Grief during the COVID-19 pandemic: considerations for palliative care providers. *J Pain Symptom Manage.* 2020; 60(10):70-76. doi: 10.1016/j.jpainsymman.2020.04.012.
25. Liu Q, Luo D, Haase J, Guo Q, Wang Z, Liu S, et al. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *Lancet Glob Health.* 2020;8 (6):790-8. doi:10.1016/S2214-109X(20)30204-7.
26. Gaffney B, O'Carrol O, Finbarr C, Butler M, Keane M, McCarthy C. The impact of COVID-19 on clinical education of internal medicine trainees. *Ir J Med Sci.* 2020;1-3. doi:0.1007/s11845-020-02350-z. Advance online publication.
27. Kee A, Archuleta S, Dan Y. Internal medicine residency training in the COVID-19 era – reflections from Singapore. *J Grad Med Educ.* 2020. doi:10.4300/JGME-D-20-00315.1. Advance online publication.
28. Ou A, Torres C, Rufin M. Thank you for your flexibility during these unprecedented times. *JAMA Intern Med.* 2020;180(10):1278-9. doi:10.1001/jamainternmed.2020.3020.
29. Hu X, Yan H, Casey T, Wu C. Creating a safe haven during the crisis: how organizations can achieve deep compliance with COVID-19 safety measures in the hospitality industry. *Int J Hosp Manag.* 2020; 92:102662. doi:10.1016/j.ijhm.2020.102662.

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