

VOLUME 03 ISSUE 02 (2024)



AMERICAN JOURNAL OF
**MEDICAL SCIENCE
AND INNOVATION**
(AJMSI)

ISSN: 2836-8509 (ONLINE)



PUBLISHED BY

E-PALLI PUBLISHERS, DELAWARE, USA

Attributes Associated with Burnout among Pediatric Residents in Training Hospitals of Central Visayas

Ellaine Shiela Marie Corpuz^{1*}, Michelene E. Escobar-Buot¹, Mary Ann A. Wagas¹

Article Information

Received: June 12, 2024

Accepted: July 14, 2024

Published: July 17, 2024

Keywords

Burnout, Psychological Distress, Pediatric Resident Physicians, Central Visayas

ABSTRACT

This study focused on burnout among pediatric resident physicians in Central Visayas, exploring its association with various factors and coping strategies. The research objectives aimed to describe the socio-demographic profiles of respondents, assess burnout levels, analyze psychological distress, examine associations between socio-demographic factors and burnout/psychological distress, and identify burnout factors and coping strategies. The study utilized a cross-sectional design involving 80 pediatric residents, using the Maslach Burnout Inventory, Patient Health Questionnaire, and self-assessment questions. The analysis included mean, standard deviation, chi-square, and Fisher's exact tests to explore associations and predictors of burnout. The findings revealed no incidence of burnout but indicated moderate emotional exhaustion, high depersonalization, and high personal accomplishment. The majority had experienced burnout in previous residency years. The top burnout factors were co-residents, conflicts, and consultants, while coping strategies included stress eating, exercise, and vacation leave. Psychological distress ranged from mild to severe, with anxiety and depression prevalent among certain groups. The study suggests the need for work-life balance training to address burnout incidents, particularly in developing economies like the Philippines. This recommendation aims to support the well-being of pediatric residents and improve their work-life balance.

INTRODUCTION

Physician burnout is a growing problem worldwide causing mental fatigue, depersonalization, and diminished self-value. It is noted as more prevalent in an environment that is potentially intense and physically demanding or requires higher levels of commitment and resiliency, such as the pediatric residency program. According to the American Academy of Pediatrics (2022), the prevalence of burnout for all pediatric disciplines increased by 10% within a 3 - year period (2011 to 2014).

Pediatric resident burnout is multifactorial and recent evidence has shown that burnout may begin as early during medical school and into residency period. Among the demographics, it was reported that there was a higher prevalence of 20% to 60% burnout rate in women physicians than male counterparts (AAP 2022). Meanwhile, a significant association between burnout and anxiety was concluded (Koutsimani, *et al.* 2019), and among the significant sources of anxiety are changes in workflow, and competing demands between service and training (Franco, *et al.* 2022). These factors may contribute to burnout, which affects the resident's mental health, performance, and the quality of their training and has adverse consequences on patient care.

Burnout may be challenging to recognize, and many questionnaires have been developed to measure it. The most extensively used and considered standard is the Maslach Burnout Inventory which includes three domains: emotional exhaustion, depersonalization, and personal accomplishment. This study investigated the

incidence and attributes of burnout among pediatric residents in hospital-accredited training hospitals by the Philippine Pediatric Society in Central Visayas.

LITERATURE REVIEW

Respondents' Profile and Burnout

The incidence of burnout among physicians has certain demographic attributes and personal experiences linked with physician burnout. In general, females prefer a career in pediatrics compared to males and this may explain a higher work satisfaction and therefore less burnout risk. One study in Jordan revealed that male residents were found to have significantly higher burnout and levels were significantly different among residency years (Nimer *et al.*, 2021).

In some cases, burnout was associated with younger age groups as seen in those younger than 30 years old (Ji *et al.* 2020). Unmarried residents were also seen to have higher burnout rates as married residents have the social support of their spouse which acts as a buffer for the period of the residency program and protects against the proneness of burnout (Sreelatha *et al.*, 2018). This contrasts with one study where a statistically significant relationship was noted between burnout and relationship status, where married residents suffered from higher emotional exhaustion and depersonalization (Jamjoom & Park, 2018). Studies also show that as the years of residency increased, the burnout in all three dimensions also increased with the 3rd year residents having the highest burnout rates in all three dimensions. Moreover, burnout

¹ Visayasmed Hospital, Philippines

* Corresponding author's e-mail: Esm.Cpz@Gmail.Com

was prevalent and remained stable over at least 12 months among pediatric residents (Kemper *et al.*, 2019).

Nevertheless, burnout may not necessarily imply a strong association with profiles. Some studies also showed that demographic variables like gender, ethnicity, marital status, and residential status did not reveal any significant association with the level of burnout (Kemper *et al.*, 2019; Bari *et al.*, 2019).

Incidence and Factors of Burnout

The role of physicians has unique job factors and responsibilities that may predispose to significant burnout. Studies have shown using the Maslach Burnout Inventory that residents had high levels of burnout on at least one subscale in two components and or alarmingly high levels on all three subscales. It is multifactorial and some attribute it to working ≥ 40 hours per week (Nimer *et al.* 2021), sleep deprivation (Kemper *et al.*, 2019, Ji *et al.*, 2020), relationship with workers, feelings of isolation, dealing with patients' psychosocial problems, disturbance of home/family life by work (Nimer *et al.* 2021, Kemper *et al.*, 2019), overloaded workloads, lack of autonomy (Rotenstein *et al.*, 2018), and recent medical errors (Kemper *et al.*, 2019). These factors can contribute to residents' emotional exhaustion that can make the practitioner feel perpetually exhausted and annoyed, unaccomplished, and unappreciated.

Despite this, not all studies revealed the presence of burnout in all residents. One study in Thailand showed none of their forty-one pediatric residents had high levels of burnout in all three domains of the Maslach Burnout Inventory questionnaire, with a positive relation between educational climate (perceptions of role autonomy, perceptions of teaching, perceptions of social support) and work-related quality of life (Kemper *et al.*, 2019). Predictive factors of decreased burnout also include resilience and mindfulness of stress (Reed *et al.*, 2018). Other factors identified to reduce the risk of burnout include minimizing unnecessary or duplicated workload, scheduling time arrangements to avoid extension of regular duty hours, and clearly defining role expectations (Puranitee *et al.* 2019).

Psychological Distress and Burnout

Research on burnout among physicians has increased awareness of physician mental health and well-being as an important issue. Psychologic distress and burnout share risk factors, manifestations, and complications. Some notable consequences of burnout include psychological alterations, a syndrome on concentration and memory problems, difficulty in decision-making, low coping capacity, anxiety, depression, dissatisfaction with life, insomnia, irritability, and increased consumption of alcohol and tobacco (Laguia *et al.*, 2022, Brunsberg *et al.*, 2019); health consequences manifested as physical health problems including musculoskeletal pain, stomach pains, cardiovascular disorders, headache, increased susceptibility to infections, insomnia and chronic fatigue

and even a health risk for type 2 diabetes (Laguia *et al.*, 2022, Roberts *et al.*, 2021).

High psychological distress has been associated with higher sickness rates, absenteeism, and diminished work performance that progresses to physical health issues (Roberts *et al.*, 2021). Furthermore, for various reasons, those who suffer from depression or burnout can be slow to seek assistance leading to a two-fold increased risk of suicidal thoughts (Brunsberg *et al.* 2019).

Work problems that cause distress were frequently adversely affected by episodes of psychological distress. Screening positive for depression was associated with a 3.0-fold higher rate of harmful errors (Brunsberg *et al.*, 2019; Okoro *et al.* (2024). Hence, identifying any psychological distress among physicians may contribute to less frequency of burnout, or vice-versa, and is crucial in influencing the long-term mental health of physicians. In contrast to psychological stress, mindfulness, resilience, and self-compassion were longitudinally associated with lower stress and greater confidence in providing compassionate care and may be key areas for improved wellness (Reed *et al.*, 2018, Kemper *et al.*, 2020, Brunsberg *et al.*, 2019). Attributes that are associated with burnout and compassion fatigue include the type of institution (government), sleeping hours (average of fewer than 4 hours per day), and interrupted leaves, while differences observed in compassion satisfaction and burnout were age, marital status (married), child dependents, higher level of training (Ang *et. al.*, 2021, Kemper *et al.*, 2020), location and type of institution (Ang *et. al.*, 2021). However, there also had been studies showing no association of demographic data between a positive screen for depression or burnout and age, gender, or year of residency (Brunsberg *et al.*, 2019).

Coping Mechanism of Burnout

Coping mechanisms are necessary to help overcome these stressors in the workplace. Organizational ergonomic issues, including work stress and burnout of healthcare professionals, can negatively impact patient care and safety. Burned-out physicians reported sub-optimal patient care practices that, in turn, are negatively associated with patient satisfaction. Balancing activities addressed to individual stressors can contribute to improving the resident's well-being thereby making the environment less stressful. Mindfulness-based stress reduction for two and half hours a week for two months showed substantial improvements in burnout scores and mental well-being. Taking vacations, exercising, and personal hobbies can contribute to reducing the level of burnout (Alotaibi *et al.*, 2019).

Quiet quitting, then, is often used to cope with burnout. It has been defined in a couple of different ways — some describe it as not actively going above and beyond at work, while others see it as doing only the bare minimum to remain employed. Some defend quiet quitting as “just doing your job,” whereas others see it as passive resistance to redrawing the boundaries between their professional

and personal lives (Quiet Quitting, 2023). While burnout is not classified as a medical condition, it is important to note that it is an occupational phenomenon that can severely affect employees' mental and physical health. This is different from having a bad week or a stressful project. Burnout is a consistent and prolonged state of being in a non-productive state due to physical and psychological emotions often related to issues and factors in the workplace or living environment.

Burned-out workers are more likely to take a sick day, actively look for a different job, become less confident in their performance, and are more likely to visit the emergency room. When unaddressed, the costs of burnout are too big to ignore. The financial burden of work-related stress and burnout in the U.S. amounts to approximately \$190 billion a year in additional healthcare expenses, and when absenteeism is added to the cost, turnover diminished productivity, and legal and insurance costs, it totals about \$300 billion (Rokka & Khanal, 2023). Burnout may be common in the workplace, but the physical symptoms and the broader consequences vary by person, role, and industry. In addition to creating and encouraging an empathetic culture, employers need to adopt a proactive approach to managing the unique needs of each employee. Some employees benefit from feeling more involved at work, whereas others might need space to step away and decompress. Managers cannot adopt a "one size fits all" approach to mitigating burnout. Thus, this study is deemed important in addressing all the consequences mentioned earlier when pediatric residents suffer from burnout.

Statement of the Problem

This study determined the incidence and factors of burnout among Pediatric Resident Physicians in Central Visayas. Specifically, it aimed to:

1. Describe the respondent's profile in terms of age, sex, civil status, year graduated from the College of Medicine, year level in residency training, and type of training institution.
2. Determine the level of burnout incidence among respondents manifested in the following dimensions on emotional exhaustion, depersonalization, sense of personal accomplishment.
3. Determine the level of psychological distress among respondents.
4. Determine if there is an association between respondent's profile and level of psychological distress among respondents.
5. Determine if there is an association between respondent's profile and level of burnout.
6. Determine the factors and coping strategies of burnout among pediatric residents.

Theoretical Framework

This study was anchored on Demand-Resources Theory and Structural Theory. Demands-Resources Theory postulates that burnout

happens when there is an imbalance between demands and resources at the workplace. Work-related demands are those factors that require sustained physical or mental effort and are associated with certain physiological costs resulting from activation of the hypothalamic-pituitary-adrenal axis and psychological costs like subjective fatigue, the low focus of attention, and redefinition of work requirements. Common work-related demands may include work overload, emotional labor, time pressure, or interpersonal conflicts. When recovery in the face of such demands is insufficient, physical, and mental exhaustion can be triggered (Laguia et. al, 2022). On the other hand, work resources include the physical, psychological, and social aspects of work that can reduce the demands of work. The moment demands exceed resources, fatigue happens; if this imbalance is maintained over a period, fatigue may become chronic then burnout appears as emotional exhaustion, while the existence of work resources may inversely influence depersonalization by reducing its use as a coping strategy.

Structural Theory postulates that burnout is a response to chronic work-related stress that occurs when the coping strategies employed by the practitioners in managing work stressors fail. At first, work stress will elicit a series of coping strategies. However, when prior coping strategies employed are not successful, it leads to professional failure hence a feeling of low personal fulfillment at work and emotional exhaustion will be developed. Having these feelings, the practitioner develops depersonalization attitudes as a new form of coping mechanism (Laguia et. al, 2022).

Scope and Limitations

This study was limited in determining the incidence and attributes associated with and coping mechanism of burnout. Variables under study were respondent's profile such as sex, age, civil status, residency year level, year graduated from the college of medicine, and type of training institution. Other variables include the level of psychological distress and the three dimensions of burnout: emotional exhaustion, depersonalization, and a sense of personal accomplishment. It was conducted in 2024 and involved only the pediatric resident physicians from the twelve (12) accredited pediatric residency training hospitals by the Philippine Pediatric Society in Central Visayas. Respondents were only those with at least six months into the training program and who consented to participate in the study. The data was gathered using the Patient Health Questionnaire for Depression and Anxiety (PHQ-4) to measure psychological distress and the Maslach Burnout Inventory (MBI) for the incidence of burnout.

METHODOLOGY

Research Design

This study employed a descriptive cross-sectional design utilizing a survey questionnaire. This design is considered advantageous as it determined the incidence

and attributes associated with burnout and psychological distress among pediatric residents. Literature pointed out that a cross sectional study is most suitable for estimating the incidence of a behavior in a population at a certain moment in time.

Study Setting

This study was conducted in twelve (12) hospital-accredited pediatric residency training hospitals by the Philippine Pediatric Society in Central Visayas, namely: Cebu City Medical Center (N. Bacalso Ave., Cebu City), Cebu Doctors University Hospital (Osmeña Blvd., Cebu City), Cebu Velez General Hospital (F. Ramos St., Cebu City), Chong Hua Hospital (Fuente Osmeña, Cebu City), Chong Hua Hospital- Mandaue (Mandaue City, Cebu), Gov. Celestino Gallares Hospital (Tagbilaran City, Bohol), Perpetual Succour Hospital (Gorordo Ave., Cebu City), Silliman University Medical Center (Dumaguete City), Southwestern University Medical Center (Urgello St., Cebu City), University of Cebu Medical Center (Mandaue City, Cebu), Vicente Sotto Memorial Medical Center (B. Rodriguez St., Cebu City) and VisayasMed Hospital (Osmeña Blvd., Cebu City).

Study Population and Sampling Technique

This study included 80 residents from 100 Pediatric Resident Physicians in 12 accredited Pediatric Residency Training Hospitals by the Philippine Pediatric Society in Central Visayas, who had at least 6 months of residency

training. The sample size is computed using a web calculator based on a 95% CI, 5% error, proportion of 50%, and population base of 100.

Research Instruments

The instrument used in this survey was a self-administered online questionnaire in Google form and is a modified adaptation of the Maslach Burnout Inventory and Patient Health Questionnaire-4 for Depression and Anxiety consisting of three parts. The first part comprised the general information on the sociodemographic characteristics of the respondents such as age, sex, civil status, year graduated from the College of Medicine, residency year level, and type of training institution (government or private hospital). The second part comprised the 22-item Maslach Burnout Inventory questionnaire which comprises three (3) domains: emotional exhaustion, depersonalization, and sense of personal accomplishment, a validated questionnaire to assess burnout and the four-item Patient Health Questionnaire for Depression and Anxiety (PHQ-4), to measure psychological distress, a validated brief screening tool for both anxiety and depression. The third part comprised the self-assessment questionnaire for burnout factors and the participant’s coping mechanism. No dialect translation will be done since all respondents are post-graduate level and can understand English.

Scoring Procedure

Table 1: Level of Burnout (22-item Maslach Burnout Inventory)

Dimension	Score (Sum across domain-specific items)	Interpretation
Emotional Exhaustion	17 and below	Low-level
	18 to 29	Moderate
	30 and above	High-level
Depersonalization	Five and below	Low-level
	6 to 11	Moderate
	12 and above	High-level
Sense of personal accomplishment (Consequence of the first two)	33 and below	High Level
	34 to 39	Moderate
	Greater than 40	Low level

Burnout: High Emotional Exhaustion, High Depersonalization, but Low sense of Personal Accomplishment

Table 2: Psychological Distress: Anxiety and Depression (Patient Health Questionnaire-4)

Score (Sum of each of the four items)	Interpretation
0-2	Normal
3-5	Mild Distress
6-8	Moderate Distress
9-12	Severe Distress

A total score ≥ 3 for the first two questions suggests anxiety. A total score ≥ 3 for the last two questions suggests depression.

Statistical Treatment of Data

Data were statistically described in terms of mean \pm SD, or frequencies when appropriate. Comparison was done using Student t, or Chi-square (χ^2) tests. Fisher’s Exact test was used instead when the expected frequency was < 5 , or when the assumptions of Chi-square were violated. All tests were two-tailed, and the level of significance was set at p-value < 0.05 .

Ethical Consideration

The study complied with the ethical principles outlined in the Declaration of Helsinki and the National Ethical

Guideline for Health and Health-related Research (2017). Before the study initiation, the protocol was reviewed and approved by the Institutional Review Board (IRB) of VisayasMed Hospital.

The researcher ensured that all records from the respondents were treated with strict confidentiality. Their names were not reflected in the file for data analysis. Instead, only the numbers corresponding to their names in the source code can be seen.

The source code is in the possession of the researcher only. Only the researcher and the biostatistician have sole access to collected data. Excel sheets for data processing did not contain any information that would give away the

identity of Pediatric Resident Physicians. Also, this paper is self-funded because it is intended for the compliance of residency training of the hospital and the Philippine Pediatric Society, Inc. Thus, it is not funded by any organization or pharmaceutical companies that might benefit from the study results.

RESULTS AND DISCUSSIONS

Results

Profile of Residents in Terms of Age, Sex, Civil Status, Year Graduated from the College of Medicine, Year Level in Residency Training, and Type of Training Institution.

Table 3: Sociodemographic profile of the respondents

Profile	All Respondents	Government	Private	p-value
	N=80	n=17	n=63	
Age, years, (%)				
20 – 29	30 (37.5)	3 (17.6)	27 (42.9)	.100
30 – 39	48 (60.0)	14 (82.4)	34 (54.0)	
Older than 40	2 (2.5)	-	2 (3.1)	
Sex				
Male	15 (18.8)	6 (35.3)	9 (14.3)	.049
Female	65 (81.2)	11 (64.7)	54 (85.7)	
Civil status				
Unmarried	67 (83.8)	15 (88.2)	52 (82.5)	.572
Married	13 (16.2)	2 (11.8)	11 (17.5)	
Year graduated from the College of Medicine				
Before 2020	44 (55.0)	11 (64.7)	33 (52.4)	.538
2020	13 (16.3)	3 (17.6)	10 (15.9)	
2021	20 (25.0)	2 (11.8)	18 (28.6)	
2022	3 (3.7)	1 (5.9)	2 (3.1)	
Residency year level				
Y1	34 (42.5)	9 (52.9)	25 (39.7)	.142
Y2	12 (15.0)	-	12 (19.0)	
Y3	34 (42.5)	8 (47.1)	26 (41.3)	

Table 3 presents the distribution of the respondents according to the socio-demographic profiles. There were 80 respondents to this survey, who were mostly from private training hospitals (78.75%). The difference in the proportion of respondents from private and government institutions is statistically significant (p<.0001). Most of the pediatric residents were 30 years and older (62.5%), but those from the government institution were mostly 30 – 39 years old (82.4%). Further, most of them were females (81.2%), from private (85.7%) and government

hospitals (64.7%). They are mostly unmarried (83.8%) and are in their first year (42.5%) and third year (42.5%) of their residency training. There were no second-year respondents from the government institution. With this number of participants, this limits the findings since it resulted in a skewed result.

Level of Burnout Incidence among Respondents as Manifested in Emotional Exhaustion, Depersonalization, and Sense of Personal Accomplishment

Table 4: Distribution of Respondents' Level of Burnout based on Dimension (EE, DP, PA) and Type Training Hospitals

Dimension	All Respondents	Government	Private	p-value
Emotional Exhaustion	13.1 ± 4.4	13.9 ± 4.6	12.9 ± 4.3	.375
Low	66 (82.5)	13 (76.5)	53 (84.1)	.461
Moderate	14 (17.5)	4 (23.5)	10 (15.9)	

Depersonalization	8.2 ± 4.0	8.65 ± 4.3	8.13 ± 4.9	.636
Low	19 (23.8)	4 (23.5)	15 (23.8)	.985
Moderate	41 (51.2)	9 (52.9)	32 (50.8)	
High	20 (25.0)	4 (23.5)	16 (25.4)	
Sense of personal accomplishment	20.0 ± 4.1	20.0 ± 3.9	20.0 ± 4.2	.989
High	80 (100.)	17 (100.0)	63 (100.0)	-

Legend:

Normative scores to calculate the level of burnout with the Maslach Burnout Inventory Emotional Exhaustion (Sum of Scores) Low: <17; Moderate: 18-29; High: >30

Depersonalization score (Sum of Scores) Low: <5, Moderate: 6-11; High: >12;

Sense of personal accomplishment (Sum of Scores) Low: >40; Moderate: 34-39; High: <33

Table 4 shows the distribution of respondents on the

level of burnout from different training hospitals under the subscales of emotional exhaustion, depersonalization, and sense of personal accomplishment. Overall, the findings revealed that most of the respondents had low emotional exhaustion (82.5%) but moderate to high levels of depersonalization (76.2%). Remarkably, respondents from both sectors displayed a high sense of personal accomplishment, demonstrating identical mean scores.

Table 5: Respondent’s Responses to the Burnout Survey Questionnaire

Questions	No. of Respondents	Percentage
1. In your current residency year, have you ever felt burned out during your previous years in residency?		
No	6	7.5
Yes	74	92.5
2. If this is not your first time/exposure in pediatric residency training, can you recall if you have felt burnout?		
No	73	91.3
Yes	7	8.7
3. What was your year level when you experienced burnout in your previous years in residency?		
None	29	36.3
y1	31	38.8
y2	6	7.5
y3	3	3.8
y1 & y2	5	6.3
y1, y2, y3	5	6.3

Results from a survey questionnaire on burnout confirmed previous experience of burnout as shown in table 5 The respondents, when asked if they ever felt burned out during their previous years of residency, answered “YES” (92.5%). However, they could not recall (91.3%) when the first time they felt the feeling of burnout. However, some said it was in their first year of residency in training (38.8%).

Residents’ Level of Psychological Distress and Incidence of Anxiety and Depression

Table 6 shows the respondent’s level of psychological distress and incidence of depression and anxiety. Generally, mild (5.7 ± 3.5) psychological distress can be noted among respondents, where the majority (52.9%) were from government training hospitals. It is

Table 6: Respondents Level of psychological distress and Incidence of Anxiety and Depression

Dimension	All Respondents	Government	Private	p-value
	N= 80	n=17	n=63	
Psychological distress	5.7 ± 3.5	5.5 ± 2.9	5.7 ± 3.7	.801
Normal	16 (20.0)	2 (11.8)	14 (22.2)	.564
Mild	31 (38.8)	9 (52.9)	22 (34.9)	
Moderate	22 (27.5)	4 (23.5)	18 (28.6)	
Severe	11 (13.8)	2 (11.8)	9 (14.3)	
Presence of Anxiety	39 (48.8)	7 (41.2)	32 (50.8)	.481
Presence of Depression	30 (37.5)	6 (35.3)	24 (38.1)	.832

Psychological Distress: Normal 0-2; Mild distress 3-5; Moderate 6-8; Severe 9-12

Presence of anxiety: ≥ 3 for the first two questions (PHQ4)

Presence of Depression: ≥ 3 for the last two questions (PHQ4)

noteworthy that almost half of the respondents had the presence of anxiety (48.8%), and depression (37.5%). And their emotional state did not significantly differ whether they were from the government or private training hospitals.

Association between Residents' Profile and Level of Burnout on Emotional Exhaustion

It can be gleaned from Table 7 that there was no significant association between emotional exhaustion and each of the respondent's sociodemographic profiles as indicated in p-values exceeding the 0.05 level of significance. However, it can be noted that there are pediatric physicians with moderate levels of emotional exhaustion including those 30 years and older (64.3%),

Table 7: Sociodemographic profile of the respondents and emotional exhaustion

Profile	All Respondents	Low	Moderate	p-value
	N= 80	n=66	n=14	
Age, years,				
20 – 29	30 (37.5)	25 (37.9)	5 (35.7)	.782
30 – 39	48 (60.0)	39 (59.1)	9 (64.3)	
Older than 40	2 (2.5)	2 (3.0)	-	
Sex				
Male	15 (18.8)	12 (18.2)	3 (21.4)	.777*
Female	65 (81.2)	54 (81.8)	65 (81.6)	
Civil status				
Unmarried	67 (83.8)	57 (86.4)	10 (71.4)	.169
Married	13 (16.2)	9 (13.6)	4 (28.6)	
Residency year level				
Y1	34 (42.5)	28 (42.4)	25 (39.7)	.142
Y2	12 (15.0)	11 (16.7)	12 (19.0)	
Y3	34 (42.5)	27 (40.9)	26 (41.3)	
Type of training institution				
Government	17 (21.3)	13 (19.7)	4 (26.6)	.461
Private	63 (78.7)	53 (80.3)	10 (71.4)	

Legend: Significant at $p < 0.05$ alpha level; S *Significant; NS-Not Significant

females (81.6%), unmarried (71.4%), 3rd-year residents (41.3%), and those from private institutions (71.4%).

Association between Profile and Level of Burnout on Depersonalization

Table 8 describes the association between the sociodemographic profile of the respondents and the level of depersonalization. Data revealed that there is no significant association between the level of

depersonalization and their socio-demographic profile, except for age, with a p-value of 0.45 which is lower than the significant value of 0.05. Moreover, there are pediatric physicians with high levels of depersonalization with an age range of 30 to 39 years old (50.0%), females (75.0%), unmarried (95.0%), in their third year of residency training (55.0%) and mostly from private training hospitals (80.0%).

Table 8: Profile of the respondents and level of depersonalization

Profile	All Respondents	Low	Moderate	High	p-value
	N= 80	n=19	n=41	n=20	
Age, years, (%)					
20 – 29	30 (37.5)	8 (42.1)	12 (29.3)	10 (50.0)	.045
30 – 39	48 (60.0)	9 (47.4)	29 (70.7)	10 (50.0)	
Older than 40	2 (2.5)	2 (10.5)	-	-	
Sex					
Male	15 (18.8)	-	10 (24.4)	5 (25.0)	.056

Female	65 (81.2)	19 (100.0)	31 (75.6)	15 (75.0)	
Civil status					
Unmarried	67 (83.8)	15 (78.9)	33 (80.5)	19 (95.0)	.286
Married	13 (16.2)	4 (21.1)	8 (19.5)	1 (5.0)	
Residency year level					
Y1	34 (42.5)	12 (63.2)	16 (39.0)	6 (30.0)	.215
Y2	12 (15.0)	1 (5.3)	8 (19.5)	3 (15.0)	
Y3	34 (42.5)	6 (31.5)	17 (41.5)	11 (55.0)	
Type of training institution					
Government	17 (21.3)	4 (21.1)	9 (22.0)	4 (20.0)	.985
Private	63 (78.7)	15 (78.9)	32 (78.0)	16 (80.0)	

Legend: Significant at $p < 0.05$ alpha level; S *Significant; NS-Not Significant

Residents' Profile and Level of Psychological Distress

Table 9 shows the association between the respondent's sociodemographic profile and their level of emotional distress. The analysis of respondents across various levels of psychological distress reveals diverse trends. Firstly, respondents predominantly fall into the normal and mild distress categories, with smaller proportions in the moderate and severe categories. Despite this, individuals in the 30-39 age group exhibit higher representation across all distress levels, although there is no significant difference in age distribution among the distress levels. Females constitute the majority across all distress levels, with variations in the distribution of males and females, yet not statistically significant.

Additionally, unmarried individuals dominate all distress levels, with a higher percentage in the severe distress category, though the difference in civil status distribution among distress levels is not statistically significant. Moreover, the distribution of residents across different year levels remains relatively balanced across distress levels, with no significant difference observed. Similarly, respondents from private training institutions form the majority across all distress levels, with no significant disparity in distribution between government and private training institutions among distress levels. Overall, while certain demographic groups exhibit higher representation across distress levels, there are no significant associations in age, gender, civil status, residency year level, or institutional affiliation distribution among the distress levels.

Table 9: Profile of the respondents and level of emotional distress

Profile	All Respondents	Normal	Mild	Moderate	Severe	p-value
	N= 80	n=16	n=31	n=22	n=11	
Age, years, n (%)						
20 – 29	30 (37.5)	4 (25.0)	12 (38.7)	10 (45.5)	4 (36.4)	.783
30 – 39	48 (60.0)	11 (68.8)	18 (58.1)	12 (54.5)	7 (63.6)	
Older than 40	2 (2.5)	1 (6.2)	1 (3.2)	-	-	
Sex						
Male	15 (18.8)	3 (18.8)	4 (12.9)	7 (31.8)	1 (9.1)	.280
Female	65 (81.2)	13 (81.2)	27 (87.1)	15 (68.2)	10 (90.9)	
Civil status						
Unmarried	67 (83.8)	13 (81.3)	24 (77.4)	20 (90.9)	10 (90.9)	.526
Married	13 (16.2)	3 (18.7)	7 (22.6)	2 (9.1)	1 (9.1)	
Residency year level						
Y1	34 (42.5)	7 (43.8)	14 (45.2)	8 (36.4)	5 (45.5)	.987
Y2	12 (15.0)	2 (12.5)	5 (16.1)	3 (13.6)	2 (18.2)	
Y3	34 (42.5)	7 (43.8)	12 (38.7)	11 (50.0)	4 (36.3)	
Type of training institution						
Government	17 (21.3)	2 (12.5)	9 (29.0)	4 (18.2)	2 (18.2)	.564
Private	63 (78.7)	14 (87.5)	22 (71.0)	9 (81.8)	9 (81.8)	

Association of Profile and Anxiety and Depression

Table 10 explains the sociodemographic profile of the respondents and the incidence of anxiety and depression. It can be gleaned that there was no significant association between each of the socio-demographic profiles of the respondents and the prevalence of anxiety and depression. However, data shows that anxiety is prevalent among older pediatric resident physicians. Its distribution level across different age groups shows a higher percentage (53.8%) of residents between 30

to 39 years old compared to those aged 20-29 (43.6%). Most individuals experiencing anxiety and depression are females (A=79.5%, D= 73.3%), and unmarried (A=89.7%, D=90%). The distribution of anxiety and depression levels across residency year levels varied where the incidence of anxiety was more seen among 1st-year residents while the incidence of depression was more seen among those in their 3rd year of residency, and most were from private training hospitals.

Table 10: Profile of the respondents and the presence of anxiety and depression

Profile	Anxiety n= 39	p-value	Depression n=30	p-value
Age, years, (%)				
20 – 29	18 (46.2)	.142	12 (40.0)	.527
30 – 39	21 (53.8)		18 (60.0)	
Older than 40	-		-	
Sex				
Male	8 (20.5)	.694	8 (26.7)	.160
Female	31 (79.5)		22 (73.3)	
Civil status				
Unmarried	35 (89.7)	.156	27 (90.0)	.240
Married	4 (10.3)		3 (10.0)	
Residency year level				
Y1	17 (43.6)	.686	12 (40.0)	.837
Y2	7 (17.9)		4 (13.3)	
Y3	15 (38.5)		14 (46.7)	
Type of training institution				
Government	7 (17.9)	.481	6 (20.0)	.832
Private	32 (82.1)		24 (80.0)	

Distribution of the Attributes of Burnout

Table 11 illustrates the factors of burnout. The top three factors of burnout are caused by co-residents (42.5%), misunderstanding and interpersonal conflicts (40.0%), and consultants (37.5%). All three are about human factors and their interaction in the workplace. Meanwhile, most pediatric resident physicians were least bothered

about work schedules, the other people in the hospitals, and bullying as it ranks the lowest three among the identified factors (8%,9%, and 11% respectively). Meanwhile, there was no in-depth interview conducted to support how these top three (3) identified factors specifically attributed to the respondent’s burnout which limits the findings of the study.

Table 11: Attributes of burnout

Attributes	No. of Respondents	Percentage
Co-residents	34	42.5
Misunderstanding, interpersonal conflicts	32	40.0
Consultants	30	37.5
Workload	23	28.7
Living alone	18	22.5
Loneliness	18	22.5
Overload, unfair workload	16	20.0
Bullying	9	11.3
Other people in the hospital	7	8.8
Work schedule	6	7.5

Coping Mechanisms on Factors of Burnout

Table 12 shows the respondents' coping mechanisms. The most common coping mechanism reported by respondents is indulging in food trips, with 72.5% of individuals using this method. Some went to wellness and self-care activities such as yoga, massage, spa, and exercise

(43.8%), while some went on vacation leave (41.3%). Although there were a few who opted to quit (2.5%) and did online shopping (1.3%), diving or shooting (1.3%) which is somewhat scary, and one has opted to seek professional help (1.3%). The burnout for this resident is deep because they opted to seek professional help.

Table 12: Coping Mechanisms

Coping	No. of Respondents	Percentage
Food trip	58	72.5
Exercise, yoga, spa, massage	35	43.8
Vacation leave	33	41.3
Drinking	11	13.8
Sleeping	7	8.8
Binge-watching, video games	5	6.3
Quitting	2	2.5
Online shopping	1	1.3
Sought professional help	1	1.3
Diving, shooting	1	1.3

Table 13: Training plan on work-life balance for pediatric physicians

Area of Concern	Specific Objectives	Strategies/ Activities	Persons Involved	Source of Fund	Expected Outcome
Understanding Work-Life Balance	Increase awareness of work-life balance importance Identify personal values and priorities related to work and life	Conduct workshops on work-life balance concepts. Facilitate self-assessment exercises for values alignment	Resident physicians, Training core representative	Hospital Budget	Increased awareness and alignment with work-life balance principles
Time Management and Prioritization	Develop effective time management skills. Set realistic goals and priorities	Time management workshops and seminars Goal-setting sessions with mentors	Resident physicians, Training core representatives, mentors	Hospital Budget	Enhanced productivity and goal achievement through improved time management
Stress Management and Self-Care	Develop coping strategies for stress management. Promote holistic self-care practices	Stress management workshops and counseling sessions	Resident physicians, Training core representatives, mentors	Hospital Budget	Improved well-being, reduced burnout rates, and increased resilience
Communication and Boundary Setting	Enhance communication skills. Set and maintain professional boundaries	Communication workshops Boundary-setting exercises	Resident physicians, Training core representatives, mentors	Hospital Budget	Improved interpersonal relationships and work-life balance

Task Performance Behavior and Group Process	Promoting camaraderie	Team Building Activity	Resident Physicians and training core group	Sponsorship and department Funds	Develop camaraderie
Continuous Support and Evaluation	Evaluate program effectiveness	Program evaluation and feedback via Google forms	Resident physicians, Training core representatives, mentors	Sponsorship, Department Funds	Sustained work-life balance practices and program improvement
Mentorship	Foster mentorship relationships	Mentorship programs	Resident physicians, Training core representatives, mentors	Sponsorship, Department Funds	Enhanced career satisfaction and guidance

CONCLUSIONS

Pediatric resident physicians in Central Visayas had no burnout incidence with subscales showing only moderate emotional exhaustion, high depersonalization, and high personal accomplishment. Most of them had an age range of 30-39 years old, female, unmarried, and graduated before 2020. The residents' profiles except for age, are not significantly associated with burnout outcome domains. Further, residents have psychological distress ranging from mild to severe. Anxiety and depression were prevalent among older residents, female, unmarried, and in the first year of residency and those from private training hospitals.

Majority of the respondents (92.5%) had experienced burnout during their previous residency years. The top three attributes to burnout are co-residents, misunderstanding and interpersonal conflicts, and consultants. The top 3 coping mechanisms are wellness and self-care activities such as food trips, going to yoga, massage, spa and exercise, and vacationing.

RECOMMENDATIONS

Pediatric resident burnout is multifactorial and based on the findings of the study, the researcher recommends a proposed comprehensive training plan that is developed and tailored specifically for pediatric resident physicians in Central Visayas, Philippines. Meanwhile, pediatric resident physicians must be more aware of their self-care practices in coping with psychological distress and the attributes of burnout in the exercise of self-preventive measures for a worthwhile life as practitioners.

The hospital institutions and training providers could help strengthen its support facilities by giving priority to crafting annual training plans for work-life balance. Also, a call for more support is needed from the pediatric department in reinforcing the AAP 2022 aim in Physician Health and Wellness, shifting the focus from burnout treatment to preventive physician health and wellness including targeted interventions developed by, and for physicians. This includes the promotion of a balanced

lifestyle that includes passive program strategies like joining lectures or website resources on topics like stress management, emotional wellness, and professionalism and active program strategies with out-of-hospital components like social outings, retreats, or team-building activities.

REFERENCES

- Al-Dubai, S. A., & Rampal, K. G. (2010). Prevalence and Associated Factors of Burnout among doctors in Yemen. *Journal of Occupational Health*, 52(1), 58–65. <https://doi.org/10.1539/joh.o8030>
- Alotaibi, A. K., Alsalam, A., Alruwaili, F., Almubarak, A., Alhamzah, A., Albahlal, A., & Alrobaian, M. (2019). Burnout during Ophthalmology Residency Training: A national survey in Saudi Arabia. *Saudi journal of ophthalmology: official Journal of the Saudi Ophthalmological Society*, 33(2), 130–134. <https://doi.org/10.1016/j.sjopt.2019.01.007>
- Ang, A., & Estrella, A. (2021). Burnout, compassion fatigue, and compassion satisfaction among obstetrics and gynecology resident physicians in the Philippines: A cross-sectional study. *Philippine Journal of Obstetrics & Gynecology*, 45(1), 1-10. https://www.pogsjournal.org/article.asp?issn=0116-6069;year=2021;volume=45;issue=1;spage=1;epage=10;aulast=Ang;aid=PhilippJObstetGynecol_2021_45_1_1_321182
- Bari, A., Kamran, R., Haroon, F., & Bano, I. (2019). Burnout among pediatric residents and junior consultants working at a tertiary care hospital. *Pakistan journal of medical sciences*, 35(1), 45–49. <https://doi.org/10.12669/pjms.35.1.43>
- Becker's Hospital Review. (2023, April 23). 29 physician specialties ranked by 2022 burnout rates. Becker's Hospital Review. <https://www.beckershospitalreview.com/hospital-physician-relationships/29-physician-specialties-ranked-by-2022-burnout-rates.html>
- Brunsborg, K. A., Landrigan, C. P., Garcia, B. M., Petty, C. R., Sectish, T. C., Simpkin, A. L., Spector, N. D., Starmer, A. J., West, D. C., & Calaman, S. (2019). Association

- of Pediatric Resident Physician Depression and Burnout with Harmful Medical Errors on Inpatient Services. *Academic medicine: journal of the Association of American Medical Colleges*, 94(8), 1150–1156. <https://doi.org/10.1097/ACM.0000000000002778>
- Carayon, P. (Ed.). (2011). *Handbook of human factors and ergonomics in healthcare and patient safety* (2nd ed.). CRC Press. <https://books.google.com.ph/books?id=7IJMP6UIHUIC>
- Dimitriu, M. C. T., Pantea-Stoian, A., Smaranda, A. C., Nica, A. A., Carap, A. C., Constantin, V. D., Davitoiu, A. M., Cirstoveanu, C., Bacalbasa, N., Bratu, O. G., Jacota-Alexe, F., Badiu, C. D., Smarandache, C. G., & Socea, B. (2020). Burnout syndrome in Romanian medical residents in time of the COVID-19 pandemic. *Medical hypotheses*, 144, 109972. <https://doi.org/10.1016/j.mehy.2020.109972>
- Edú-Valsania, S., Laguía, A., & Moriano, J. A. (2022). Burnout: A Review of Theory and Measurement. *International journal of environmental research and public health*, 19(3), 1780. <https://doi.org/10.3390/ijerph19031780>
- Gleason, F., Malone, E., Wood, L., Baker, S. J., Hollis, R. H., Richman, J. S., Chu, D. I., & Lindeman, B. (2020). The Job Demands-Resources Model as a Framework to Identify Factors Associated with Burnout in Surgical Residents. *Journal of Surgical Research*, 247, <https://doi.org/10.1016/j.jss.2019.10.034>
- Gray, P., Senabe, S., Naicker, N., Kgalamono, S., Yassi, A., & Spiegel, J. (2019). Workplace-Based Organizational Interventions Promoting Mental Health and Happiness among Healthcare Workers: A Realist Review. *International Journal of Environmental Research and Public Health (Online)*, 16(22), 4396. <https://doi.org/10.3390/ijerph16224396>
- Jamjoom, R. S., & Park, Y. S. (2018). Assessment of pediatric residents' burnout in a tertiary academic center. *Saudi Medical Journal*, 39(3), 296–300. <https://doi.org/10.15537/smj.2018.3.22328>
- Ji, L., Xiaowei, Z., Ling, K., Yao, F., Qingkun, S., & Jun, Z. (2020). Burnout level and job satisfaction in Chinese pediatrics residents: A web-based cross-sectional study. *Medicine*, 99(8), e19249. <https://doi.org/10.1097/MD.00000000000019249>
- Kelly, F., Uys, M., Bezuidenhout, D., Mullane, S. L., & Bristol, C. (2021). Improving healthcare worker resilience and well-being during COVID-19 using a self-directed e-learning intervention. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.748133>
- Kemper, K. J., McClafferty, H., Wilson, P. M., Serwint, J. R., Batra, M., Mahan, J. D., Schubert, C. J., Staples, B. B., & Schwartz, A. (2019). Pediatric Resident Burnout-Resilience Study Consortium. Do Mindfulness and Self-Compassion Predict Burnout in Pediatric Residents? *Academic medicine: journal of the Association of American Medical Colleges*, 94(6), 876–884. <https://doi.org/10.1097/ACM.0000000000002546>
- Kemper, K. J., Schwartz, A., Wilson, P. M., Mahan, J. D., Schubert, C. J., Staples, B. B., McClafferty, H., Serwint, J. R., & Batra, M. (2020). Pediatric Resident Burnout-Resilience study Consortium. Burnout in Pediatric Residents: Three Years of National Survey Data. *Pediatrics*, 145(1), e20191030. <https://doi.org/10.1542/peds.2019-1030>
- Kim, J., & Kim, H. (2017). Demographic and Environmental Factors Associated with Mental Health: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 14(4), 431. <https://doi.org/10.3390/ijerph14040431>
- Koinis, A., Giannou, V., Drantaki, V., Angelaina, S., Stratou, E., & Saridi, M. (2015). The impact of healthcare workers' job environment on their mental-emotional health. Coping strategies: The case of a local general hospital. *Health Psychology Research*, 3(1), 1984. <https://doi.org/10.4081/hpr.2015.1984>
- Lebert-Charron, A., Dorard, G., Boujut, E., & Wendland, J. (2018). Maternal burnout syndrome: Contextual and psychological associated factors. *Frontiers in Psychology*, 9, Article 885. <https://doi.org/10.3389/fpsyg.2018.00885>
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103–111. <https://doi.org/10.1002/wps.20311>
- McClafferty, H. H., Hubbard, D. K., Foradori, D., Brown, M. L., Profit, J., & Tawfik, D. S. (2022). Section on Integrative Medicine; Physician Health and Wellness. *Pediatrics*, 150(5), e2022059665. <https://doi.org/10.1542/peds.2022-059665>
- Nimer, A., Naser, S., Sultan, N., Alasad, R. S., Rabadi, A., Abu-Jubba, M., Al-Sabbagh, M. Q., Jaradat, K. M., AlKayed, Z., Aborajoo, E., Daradkeh, S., & Abufaraj, M. (2021). Burnout Syndrome during Residency Training in Jordan: Prevalence, Risk Factors, and Implications. *International journal of environmental research and public health*, 18(4), 1557. <https://doi.org/10.3390/ijerph18041557>
- Patel, R. S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors Related to Physician Burnout and Its Consequences: A Review. *Behavioral sciences (Basel, Switzerland)*, 8(11), 98. <https://doi.org/10.3390/bs8110098>
- Physician burnout? (2023). from <https://www.ama-assn.org/practice-management/physician-health/what-physician-burnout>
- Prins, J. T., Hoekstra-Weebers, J. E. H. M., Gazendam-Donofrio, S. M., Dillingh, G. S., Bakker, A. B., Huisman, M., Jacobs, B., & Van Der Heijden, F. M. M. A. (2010). Burnout and engagement among resident doctors in the Netherlands: A national study. *Medical Education*, 44(3), 236–247. <https://doi.org/10.1111/j.1365-2923.2009.03590.x>
- Puranitee, P., Stevens, F. F. C. J., Pakakasama, S., Plitponkarnpim, A., Vallibhakara, S. A., Busari, J. O., Heeneman, S., & van Mook, W. N. K. A. (2019). Exploring burnout and the association with the

- educational climate in pediatric residents in Thailand. *BMC Medical Education*, 19(1), 245. <https://doi.org/10.1186/s12909-019-1687-7>
- Ratnakaran, B., Prabhakaran, A., & Karunakaran, V. (2016). Prevalence of burnout and its correlates among residents in a tertiary medical center in Kerala, India: A cross-sectional study. *Journal of Postgraduate Medicine*, 62(3), 157-161. <https://doi.org/10.4103/0022-3859.184274>
- Reed, S., Kemper, K. J., Schwartz, A., Batra, M., Staples, B. B., Serwint, J. R., McClafferty, H., Schubert, C. J., Wilson, P. M., Rakowsky, A., Chase, M., & Mahan, J. D. (2018). Variability of Burnout and Stress Measures in Pediatric Residents: An Exploratory Single-Center Study from the Pediatric Resident Burnout-Resilience Study Consortium. *Journal of evidence-based integrative medicine*, 23, 2515690X18804779. <https://doi.org/10.1177/2515690X18804779>
- Navinés, R., Olivé, V., & Rocío Martín-Santos, F. F. (2021). Work stress, and resident burnout, before and during the COVID-19 pandemia: An update. *Medicina Clínica (English Edition)*, 157(3), 130-140. <https://doi.org/10.1016/j.medcle.2021.04.005>
- Okoro, L. C., Odukoya, O., Ikwuka, A. O., & Udeh, F. C. (2024). Prevalence, Patterns and Peculiarities of Depression among Tuberculosis Patients Attending Directly Observed Treatment Short-course (DOTS) Centers in Lagos State Nigeria. *American Journal of Medical Science and Innovation*, 3(1), 62-72. <https://doi.org/10.54536/ajmsi.v3i1.2653>
- Roberts, T., Daniels, J., Hulme, W., Research and Audit Federation of Trainees (RAFT), Irish Trainee Emergency Research Network (ITERN), Trainee Research in Intensive Care (TRIC), et al. (2021). Psychological distress and trauma in doctors providing frontline care during the COVID-19 pandemic in the United Kingdom and Ireland: A prospective longitudinal survey cohort study. *BMJ Open*, 11(2021), e049680. <https://doi.org/10.1136/bmjopen-2021-049680>
- Rokka, D., & Khanal, N. (2023). Job Satisfaction of Health Professionals Working in Governmental Tertiary Level Hospitals of Nepal. *American Journal of Medical Science and Innovation*, 2(1), 39-46. <https://doi.org/10.54536/ajmsi.v2i1.1330>
- Rotenstein, L. S., Torre, M., & Ramos, M. A. (2018). Prevalence of burnout among physicians: A systematic review. *JAMA*, 320(11), 1131-1150. <https://doi.org/10.1001/jama.2018.12777>
- Sreelatha, P., Premlal, L., & Ryal, V. S. S. R. (2018). Burnout and coping strategies among residents of a private medical college in South India: A cross-sectional study. *Industrial Psychiatry Journal*, 27(2), 213-218. https://doi.org/10.4103/ipj.ipj_53_18
- Stanford, F. C. (2020). The importance of diversity and inclusion in the healthcare workforce. *Journal of the National Medical Association*, 112(3), 247-249. <https://doi.org/10.1016/j.jnma.2020.03.014>
- Szabo, S., Nove, A., Matthews, Z., Bajracharya, A., Dhillon, I. S., Singh, D. R., Soares, A., & Campbell, J. (2020). Health workforce demography: a framework to improve understanding of the health workforce and support achievement of the Sustainable Development Goals. *Human Resources for Health*, 18(1). <https://doi.org/10.1186/s12960-020-0445-6>
- Søvold, L. E., Naslund, J. A., Kousoulis, A. A., Saxena, S., Essa, M. M., Grobler, C., & Münter, L. (2021). Prioritizing the Mental Health and Well-Being of Healthcare Workers: An urgent global public health priority. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.679397>
- The top 5 causes of burnout and how they relate to “quiet quitting”. Retrieved (April 23, 2023). From <https://business.kaiserpermanente.org/insights/mental-health-workplace/employee-burnout-quiet-quitting>
- World Health Organization. (2009). *WHO patient safety curriculum guide for medical schools*. World Health Organization. <https://apps.who.int/iris/handle/10665/44091>
- Uy, T. M. Z., & Alinea, M. C. D. (2022). Factors associated with attrition among residents in pediatrics: A mixed-method study in a single center in the Philippines. *Acta Medica Philippina*, 56(9). <https://actamedicaphilippina.upm.edu.ph/index.php/acta/article/view/308>
- Zubairi, A. J., & Noordin, S. (2016). Factors associated with burnout among residents in a developing country. *Annals of Medicine and Surgery*, 6, 60-63. <https://doi.org/10.1016/j.amsu.2016.01.090>