

# Optimum Working Hours for College of Physicians and Surgeons Pakistan Fellowship Residents of General Medicine and General Surgery Disciplines

Syed Khalid Ahmed Ashrafi, Siraj-ul-Haque Shaikh and Sahar Zubair Abbasi

*Department of Medical Education, College of Physicians and Surgeons Pakistan (CPSP), Karachi, Pakistan*

## ABSTRACT

**Objective:** To determine the optimum working hours per week for CPSP trainees of Fellowship Programmes in the disciplines of General Surgery and General Medicine.

**Study Design:** Mixed-methods, explanatory study.

**Place and Duration of the Study:** Department of General Medicine and Department of General Surgery, Abbasi Shaheed Hospital, Karachi, from February to August 2023.

**Methodology:** The total number of subjects included were 33 residents, 7 supervisors (4 from General Medicine and 3 from General Surgery), and 3 hospital managers (from private sector), constituting a representative sample. Postgraduate trainees (PGTs) of third-and fourth-year FCPS training programme who showed willingness to participate were included as were all supervisors and hospital managers involved in the training programme. FCPS residents, who were not willing, on leave, and on rotation to other departments were excluded, as were PGTs enrolled in university and other programmes. For quantitative analysis, survey forms were distributed to the selected participants. For qualitative analysis, one-to-one interviews were conducted in-person and through video-link. Data collection procedure included distribution by hand and via email. SPSS was used for the data analysis.

**Results:** All residents recorded that duty stress, fatigue, and burnout resulted in poor quality of family and social life. All the stakeholders were convinced that acquisition of skills, learning outcomes, and patient safety with optimum care is compromised. The duration of emergency calls varied from 30 to 36 hours. There were 19 out of 33 residents (57.5%) who recommended 24 hours of rest after each emergency call. All the supervisors recommended six to eight daily duty hours and 66 to 90 weekly working hours. Four out of seven supervisors (57.1%) suggested emergency duty of 30 hours with post-call rest of 24 hours at every 3<sup>rd</sup> day.

**Conclusion:** There is a need for a comprehensive approach that caters to the patient care as well as learning outcomes and residents' well-being when devising the duty schedules.

**Key Words:** Training hours, Fellowship programme, Fatigue, Learning outcomes.

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## INTRODUCTION

Postgraduate trainees (PGTs) acquire education and training with the responsibility of patient care.<sup>1</sup> In Pakistan, all CPSP fellowship training programmes are full-time, still the residents are required to perform duties in accredited institutions for teaching and training for a variable length of time without consideration for a dedicated study-time.<sup>2</sup> As a result, teaching and learning, in particular, are adversely affected, which is reflected in CPSP examination results of the candidates of different institutions.

88/EC of the European Parliament and the Council dated 4<sup>th</sup> November 2003 regarding organisation of the working time.<sup>3</sup> The accreditation council for graduate medical education (ACGME) approved 80 hours weekly with one day free of patient care, without clear heuristic support.<sup>4</sup>

Various countries of the developed world defined maximum working hours for PGTs in accordance to their social and cultural needs.<sup>5</sup> However, much work had not been done in the developing countries.<sup>4</sup> The public and private hospitals had found it financially beneficial to induct a bare sufficient number of residents into postgraduate training programmes without a simultaneous increase in facilities for patient care, learning and supervision of training.<sup>6,7</sup> The effects of work hours are reflected on PGTs' life, academic achievements, and patient care.<sup>8</sup> In order to prevent improper patient care and negative learning outcomes, there should be more appropriate and flexible duty hours for the resident doctors.<sup>3,9</sup>

The aim of this study was to determine the optimum working hours per week for learning and the working hours that may contribute towards burnout and fatigue while evaluating the working hours that would be acceptable to all stakeholders

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Correspondence to: Prof. Syed Khalid Ahmed Ashrafi,  
Department of ENT and Head and Neck Surgery, Abbasi  
Shaheed Hospital, Karachi, Pakistan  
E-mail: ashrafis.khalid@gmail.com

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Literature about working hours begins with the directive 2003/

including PGTs, supervisors, and institutions as well as CPSP requirements for postgraduate training programmes.

## METHODOLOGY

This mixed-methods study was conducted at the Department of General Medicine and General Surgery, Abbasi Shaheed Hospital (ASH), affiliated with Karachi Medical and Dental College (KMDC), Karachi, Pakistan, from February to August 2023. The study was approved by the KMDC Ethical Review Board (ERB) with reference number, 024/22.

All PGT trainees in third- and fourth-year fellowship (FCPS) programme in the Department of General Medicine and General Surgery were included in the study. The exclusion criteria was unwillingness to participate, on leave, on rotation to other departments, enrollment in university or another programme.

Purposive sampling was used to recruit 33 PGTs, 7 supervisors, and 3 hospital managers. Participants were provided with verbal explanations and written consent were obtained. The number of interviews was determined by data saturation.

Quantitative data were collected using self-generated survey forms (questionnaires) developed by following Association for Medical Education in Europe (AMEE) guidelines.<sup>10</sup> The forms were piloted and validated by medical education experts and included prospective informed consent from the participants. A semi-structured questionnaire for the qualitative study was formulated based on the survey responses. For the qualitative analysis, questions were developed for conducting face-to-face and video-link-based Focus Group Discussions (FGDs) for independent exploration. The composition of these groups ensured representation from third- and fourth-year FCPS PGTs, supervisors, and hospital administration, thus providing a comprehensive perspective.

In the initial phase of data collection, survey forms/questionnaires were physically administered to all study participants. The collected questionnaire data were analysed using Statistical Package for the Social Sciences (SPSS) software. The categorical variables were expressed as percentages and frequencies. In the subsequent phase, the structured questionnaire was used for the qualitative analysis.

## RESULTS

The majority of residents were females. The demographic profile and the recommendations of working hours by the PGTs are shown in Table I.

All the supervisors documented the existing working hours of six to eight hours daily and 66 to 90 hours weekly. Four out of seven supervisors (57.1%) suggested the emergency duty of 30 hours, with post-call rest of 24 hours on every 3<sup>rd</sup> day (Table II). Most of the trainers were not satisfied with the current working hours of residents with regard to the training programme (57%) and with regard to patient care and training as per the curriculum (71.4%). The recommendations regarding weekly working hours (WWH) varied from 48 to 72 hours.

**Table I: Demographics and daily, weekly and emergency call duty hours**

**of postgraduate residents (n = 33).**

	Number (Percentage)
Gender	
Female	27 (81.8)
Male	6 (18.2)
Marital status	
Married	12 (36.4)
Unmarried	21 (63.6)
Age	
27 years	5 (15.15)
28 years	8 (24.24)
29 years	12 (36.36)
30 years	5 (15.15)
31 years	1 (3.03)
32 years	1 (3.03)
33 years	1 (3.03)
Daily duty hours	
6 hours	33 (100)
Weekly duty hours	
54 hours	1 (3.03)
60 hours	4 (12.1)
65 hours	9 (27.2)
66 hours	1 (3.03)
68 hours	1 (3.03)
70 hours	1 (3.03)
72 hours	2 (6.06)
73 hours	1 (3.03)
75 hours	2 (6.06)
76 hours	4 (12.1)
80 hours	1 (3.03)
83 hours	5 (15.1)
87 hours	1 (3.03)
Emergency call duty hours	
30 hours	19 (57.6)
28 hours	2 (6.1)
24 hours	3 (9.1)
29 hours	9 (27.3)

**Table II: Duty hours as per supervisors' recommendation (n = 7).**

Daily duty hours	Number (Percentage)
8 hours	1 (14.3)
5 hours	2 (28.6)
6 hours	4 (57.1)
Weekly duty hours	
90 hours	1 (14.3)
78 hours	2 (28.6)
70 hours	1 (14.3)
73 hours	1 (14.3)
60 hours	1 (14.3)
66 hours	1 (14.3)
Emergency call duty hours	
30 hours	4 (57.1)
24 hours	2 (28.6)
29 hours	1 (14.3)
Recommended rest after emergency call	
96 hours	1 (14.3)
24 hours	6 (85.7)
Satisfaction with working hours of residents with regard to training programme	
Not satisfied	4 (57.1)
Satisfied	3 (42.9)
Satisfaction with working hours for patient care services	
Not satisfied	5 (71.4)
Satisfied	2 (28.6)
Recommended weekly hours for FCPS trainees	
56 hours	2 (28.6)
48 hours	1 (14.3)
70 hours	1 (14.3)
65 hours	1 (14.3)
60 hours	2 (28.6)

**Table III: Residents' responses from both General Surgery and General Medicine Specialities.**

Question	Theme
Describe your working hours during your training programme.	<ul style="list-style-type: none"> <li>• Busy, hectic, and involving patient care.</li> <li>• Mentally and physically tiring.</li> <li>• Involving no breaks and leading to fatigue.</li> </ul>
How do your working hours impact your social life?	<ul style="list-style-type: none"> <li>• Effects on family and social life, along with personal health.</li> <li>• Difficulty in spending time with family and children.</li> <li>• Adverse impact on social life, leading to personal sacrifices such as remaining unmarried.</li> <li>• Struggles to maintain social and family life due to the demanding schedules.</li> <li>• Compromised physical and mental health affecting overall well-being.</li> </ul>
What benefits and challenges do you perceive in longer or shorter working hours?	<ul style="list-style-type: none"> <li>• Shorter working hours: Seen as motivational, allowing better focus on work and learning. More energy for patient care, but concerns about insufficient study-time. Perceived as allowing more time for updated knowledge and better patient care. Associated with quality patient care and learning</li> <li>• Longer working hours: Potential for compromised patient care and learning. Associated with burnout, while shorter hours offer time for studies and better patient care.</li> </ul>

**Table IV: Supervisors' responses from both General Surgery and General Medicine specialities.**

Question	Theme
How decisions are made regarding residents' work schedules? (factors and considerations)	<ul style="list-style-type: none"> <li>• Trainee level.</li> <li>• Patient Care/Workload.</li> </ul>
How do you assess the impact of working hours on residents' performance, learning outcomes and job satisfaction?	<ul style="list-style-type: none"> <li>• Patient care and outcome.</li> <li>• FCPS exam results.</li> </ul>
What benefits and challenges do you perceive in having longer or shorter working for residents and overall healthcare facilities?	<ul style="list-style-type: none"> <li>• Longer working hours. Patient care and safety is at risk. Academics and health may be affected adversely.</li> <li>• Shorter working hours. Motivation for learning and patient care. Less chance for learning surgical skills.</li> </ul>

**Table V: Hospital managers' responses.**

Question	Theme
How decisions are made regarding residents' work schedules? (factors and considerations)	<ul style="list-style-type: none"> <li>• Quality patient care</li> <li>• Hospital load</li> </ul>
How do you assess the impact of working hours on residents' performance, learning outcomes and job satisfaction?	<ul style="list-style-type: none"> <li>• Supervisors should take care of their trainees in all respects.</li> </ul>
What benefits and challenges do you perceive in having longer or shorter working for residents and overall healthcare facilities?	

The hospital management (stakeholders) recommended six to eight daily working hours with emergency duty on every 3<sup>rd</sup> day and 20 hours of post-call rest. According to them, WWHs should be 72 hours or as per the need of the hospital. The hospital managers were partially satisfied with the current working hours of residents and with the quality of patient care.

The qualitative research was based on focused group information from subjects included in the study, who were inquired for independent exploration. The responses from the resident group are shown in Table III in the form of various themes. Table IV and V depict various themes derived from responses from the supervisors and hospital administration, respectively.

In brief, both surgery and medicine residents shared common experiences and perceptions regarding their working hours. Both groups highlighted the physically and mentally demanding nature of their training programmes and its negative impact on their social lives. The discussion about the benefits and challenges of longer or shorter working hours

was consistent across both specialities, emphasising the need for a balanced approach that would prioritise patient care, learning, and personal well-being. The supervisors' work schedule was based on the load of patient care and trainee status. The residents' performance was evaluated by the outcome of patient care and examination. The discussion regarding longer or shorter weekly hours focused on balanced comprehensive approach. The hospital managers were focused on the workload and delivery of patient care services only.

## DISCUSSION

The experiences and perceptions of PGTs regarding their working hours had garnered significant attention in the recent literature. PGTs consistently describe their working hours as demanding, often bordering on overwhelming, largely due to their active involvement in patient care services.<sup>11</sup> This incessant engagement frequently results in both mental and physical fatigue, which can be attributed to prolonged shifts without adequate rest periods. Consequently, the repercussions extend to their social lives, generating markedly negative effects on family interaction and personal well-being.<sup>11,12</sup>

CPSP National Residency Programme (NRP) recommends 72 WWHs with one emergency duty during the fellowship training programme. The trainees are not allowed for any other job during the training programme.<sup>13</sup> The PGTs' working hours vary from public to private sector teaching hospitals as per need and policy of the institute which may exceed 90 or more WWHs since there are no national guidelines, similar to Canada, where the duty hours are province-dependent.<sup>3</sup>

The CPSP NRP requirement for fellowship trainees is not associated with burnout. However, training backgrounds, age, gender, family status, hospital environment, working capacity, financial profile, future careers, etc. may keep residents under more pressure. Resident stress and fatigue should be given due attention while designing the mentorship programmes.<sup>14</sup> Definitive association between work stress, fatigue, gender, and married status was recorded. Female residents were found to drain out earlier in the current study. However, the literature review revealed conflicting results.<sup>15</sup> In the backdrop of lack of public health education, social, cultural and poor economic status of Pakistan, the patients and attendants at the emergency department of teaching hospitals expected the ultimate from the attending residents. Sometimes, the residents were maltreated and abused, which resulted in feeling of insecurity with reduced worthiness.<sup>7</sup>

Furthermore, the implications of extended working hours extend to their personal health, with some PGTs even making significant life choices such as remaining unmarried due to the strenuous work schedules.<sup>14</sup> This compromised physical and mental health which not only affected the residents' overall well-being but also potentially undermined the quality of patient care they are capable of delivering.

In contrast, the prospect of shorter working hours was perceived as an opportunity for continuous learning and skill refinement, a viewpoint shared by PGTs across various disciplines. PGTs suggested that shorter shifts allow for more time to acquire the latest medical knowledge and focus more intently on delivering enhanced patient care services.<sup>16</sup> Nevertheless, it is crucial to acknowledge that shorter working hours might come with their own set of limitations in terms of skill acquisition, despite the motivational aspect.

It is pertinent to highlight that the experiences of PGTs in General Surgery and General Medicine exhibit commonalities in their perceptions of training and working hours.<sup>17</sup> The physically and mentally taxing nature of these training programmes reverberates across both disciplines, significantly impacting personal lives and social interactions. The role of supervisors in shaping residents' work schedules is pivotal and multifaceted, influenced by factors like curriculum requirements, patient care, workload, and the available number of PGTs.<sup>18</sup> These supervisors play an essential role in assessing a resident's performance and learning outcomes through the clinical rounds, post-call presentations, and the observation of soft skills.

During the qualitative interviews, supervisors expressed concerns that protracted working hours could detrimentally affect patient care, learning outcomes, and summative assessments.<sup>19</sup> They advocated for a balanced approach that segments fellowship training hours into flexible units dedicated to learning, research, and quality patient care.

Conversely, hospital managers prioritised maintaining uncompromised patient care and argued that residents' work schedules should align with the hospital's needs.<sup>19</sup> They emphasised that supervisors must ensure the holistic well-being of their trainees.

The strengths of the research study included the comprehensive insights from all stakeholders including PGTs, supervisors, and hospital administration regarding the residents' duty hours. It was a mixed-methods study with quantitative survey forms (using AMEE guidelines) followed by personal interviews. This study confirmed that work stress, fatigue, and burnout are very common among fellowship trainees. Since it was a single institution research study, the sample size was relatively small and therefore, nationwide data may alter the study outcome.

## CONCLUSION

This study found that the majority of residents and supervisors recommended reduced working hours, with a more manageable on-call schedule, and more rest time after the emergency calls. The hospital management proposed six to eight daily working hours with emergency duty on every 3<sup>rd</sup> day, and 20 hours of post-call rest. This would be a positive step, but the optimal working hours may vary depending on the hospital's needs and the specific training programme. To create a safe and supportive learning environment for post-graduate residents, it is important to develop working hour policies in collaboration with residents, supervisors, and hospital administrators.

### ETHICAL APPROVAL:

Before starting the study, ethical approval was obtained from ERB, Karachi Medical and Dental College, reference no. 024/22.

### PARTICIPANTS' CONSENT:

Written and informed consent was obtained from all the participants of Abbasi Shaheed Hospital (teaching hospital of KMDC).

### COMPETING INTEREST:

The authors declared that they have no competing interest.

### AUTHORS' CONTRIBUTION:

SKAA, SUH, SZA: Idea, design, data collection, interviews, writing, analysis, critical revision.

All authors approved the final manuscript for publication.

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