

IMPACT OF PUNCTUALITY AND REGULARITY ON LEARNING BEHAVIORS AND CLINICAL SKILLS IN POST-GRADUATE RESIDENTS AT NISHTAR HOSPITAL MULTAN

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Abstract: *Punctuality and regularity are crucial traits in medical education that can significantly impact learning behaviors and clinical skills development. However, there is a lack of empirical evidence investigating their impact on postgraduate residents in the Pakistani healthcare system. This qualitative study aims to explore the experiences and perceptions of doctoral residents regarding punctuality and regularity in their clinical and learning activities at Nishtar Hospital Multan. The study also seeks to identify the perceived effects of punctuality and regularity on residents' learning behaviors and clinical skills development, highlight any barriers or facilitators to maintaining punctuality and regularity in the residency program, and provide insights to inform future interventions or policies aimed at promoting punctuality and regularity among postgraduate residents. The study found that punctuality and regularity significantly enhance postgraduate residents' learning behaviors and clinical skills. Punctual and regular residents reported better time management skills, increased exposure to different cases, and improved academic performance in their clinical and learning activities. However, some residents faced barriers to maintaining punctuality and regularity, such as long working hours and inadequate supervisor support. The study suggests that interventions aimed at promoting punctuality and regularity should consider the unique challenges and opportunities of the Pakistani healthcare system and prioritize the needs and experiences of postgraduate residents.*

Keywords: Punctuality, Regularity, Postgraduate Residents, Clinical Skills Development, Pakistani Healthcare System

Introduction

The significance of punctuality and regularity in medical education is often overlooked despite their profound potential to influence learning behaviors and clinical skills. These fundamental traits are paramount in the medical field, where time is of the essence, and consistent engagement in learning experiences is crucial for skill development. The present study focuses on understanding the impact of punctuality and regularity on the learning behaviors and clinical skills of postgraduate residents at Nishtar Hospital Multan. In the healthcare setting, punctuality goes beyond the mere act of being on time. It reflects professionalism, a commitment to responsibilities, and respect for colleagues and patients (DeAngelis, 2018). Similarly, regularity, or consistent participation in learning and clinical activities, plays a pivotal role in enhancing medical knowledge and technical skills, contributing to the overall competency of the physician (Rosenbaum & Lamas, 2012). Despite the apparent importance of punctuality and regularity, there is a shortage of empirical evidence investigating their influence on postgraduate residents' learning behaviors and clinical skills, particularly within Pakistan's healthcare system. This study aims to fill this gap by qualitatively exploring residents' experiences and perceptions.

Medical residency is a rigorous and demanding medical education phase that requires cognitive competence and behavioral skills like punctuality and regularity. These behaviors are particularly important in a high-stakes, fast-paced environment like Nishtar Hospital, one of the leading healthcare institutions in Multan, where the efficient use of time and consistent engagement can significantly impact patient care and learning outcomes (Khan et al., 2020). Prior

studies have pointed to a positive relationship between punctuality, regularity, and academic performance in various disciplines (Johnson, 2017; Harris, 2019), highlighting the importance of these behaviors in educational success. In the context of medical education, punctuality and regularity enable residents to fully participate in rounds, procedures, and discussions, promoting active learning and skill acquisition (Taylor, 2021). However, much of the existing literature relies on quantitative measures, leaving a gap in our understanding of residents' nuanced, subjective experiences. The cultural context of Pakistan, with its unique challenges and opportunities, also necessitates a more localized investigation into this issue.

The primary objective of this study is to explore the impact of punctuality and regularity on the learning behaviors and clinical skills of postgraduate residents at Nishtar Hospital, Multan. To achieve this, the study aims to:

- Understand the perceptions and experiences of postgraduate residents regarding punctuality and regularity in their clinical and learning activities.
- Identify the perceived effects of punctuality and regularity on residents' learning behaviors and clinical skills development.
- Highlight any barriers or facilitators to maintaining punctuality and regularity in the residency program.

Provide insights to inform future interventions or policies to promote punctuality and regularity among postgraduate residents.

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Methodology

A qualitative study design is applied in this research to explore postgraduate residents' subjective experiences and perceptions about the impact of punctuality and regularity on their learning behaviors and clinical skills.

The participants of this study were **admin registrars and Postgraduate Residents from 24 departments**, including surgery wards, medicines, psychiatry, gynecology, dermatology, orthopedic, neurology, neurosurgery, oncology pediatrics, pediatrics surgery, cardiology, ENT, and Ophthalmology at Nishtar Hospital, Multan. A purposive sampling method was used to select 24 residents in their last year of training programs. The fourth-year PGRs were asked for group discussions in three groups: in the first group, there were 08 PGRs; in the second group, there were also 08 PGRs; and in the last group, there were 8 PGRs. Furthermore, twenty-four admin registrars from the above wards were also asked to participate in the interview. The video interviews were conducted in an informal meeting. This sampling technique is advantageous in qualitative research as it allows the researcher to intentionally select individuals who are incredibly knowledgeable about or experienced with a phenomenon of interest (Palinkas et al., 2015).

Data was collected through in-depth, semi-structured, and informal interviews. Each interview was guided by an interview schedule developed based on themes identified from the literature. The interview questions explored residents' perceptions and experiences related to punctuality, regularity, learning behaviors, and clinical skills development. The interviews were conducted face-to-face, each expected to last approximately 15-20 minutes. With the consent of the participants, all discussions were video-recorded to ensure the accuracy of the data.

The audio-recorded interviews were transcribed soon after each interview to maintain the freshness of the data and the researcher's familiarity with it. The data was analyzed using Braun and Clarke's (2006) six-phase approach to thematic analysis. The steps include familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming pieces, and producing the report. NViv, qualitative data analysis software, was used to facilitate data coding, theme identification, and data management.

Ethical approval has been obtained from the Nishtar Hospital Research Ethics Committee. All participants were informed about the purpose of the study, their right to withdraw at any time, and the measures in place to ensure their confidentiality and anonymity. Informed consent was obtained from all participants before the commencement of the interviews.

Results

The subsequent statements present the results obtained from the analysis of the themes.

The study yielded specific findings regarding the level of regularity and punctuality observed. Approximately 60% of postgraduate residents who regularly participated in academic and clinical rounds exhibited punctuality and consistency. About 30% of the population showed irregular punctuality and consistency, characterized by occasional timeliness but an inability to maintain a consistent pattern.

Approximately 10% of the residents exhibited suboptimal timeliness and regularity, frequently demonstrating tardiness or absence during significant events.

Empirical findings regarding factors that hinder adherence to consistent attendance and timeliness:

The primary factors that hindered 45% of participants from maintaining punctuality and consistency were a substantial workload and extended workdays. According to the survey results, a quarter of the participants reported encountering transportation difficulties, particularly when residing at a considerable distance from the medical facility and experiencing unpredictable delays. Fifteen percent of the participants identified personal or family concerns as a hindrance to regular attendance. A total of 15% of the participants in the study identified intermittent lack of desire as a significant obstacle to maintaining consistency and timeliness.

Measures implemented within a particular discipline: In order to address the issue, correspondence in the form of warning letters was distributed to a subset of residents, specifically those who consistently exhibited subpar punctuality and attendance, constituting 20% of the total population. Approximately 35% of the participants received verbal warnings for minor attendance violations, with the incidents being informally addressed by supervisors. A sample of 10% of the residents was selected to participate in therapy sessions aimed at investigating the underlying factors contributing to their concerns regarding punctuality and regularity.

According to a majority of residents (70%), the practice of being punctual and maintaining regularity had a favorable impact on their learning behaviors. This, in turn, led to their active participation in rounds (80%) and engagement in academic activities (65%). According to the findings, most respondents, precisely 60%, reported that adhering to punctuality and maintaining regularity in their daily routines led to enhanced time management abilities. The findings about the specific impact on the development of clinical skills are as follows: A majority of participants (55%) indicated a positive correlation between regular attendance and timeliness and the development of clinical skills. They attributed this relationship to the consistent exposure to patient circumstances and educational opportunities that these behaviors afforded. While a significant proportion of residents (45%) considered punctuality as a crucial aspect, it is worth noting that their clinical competence was also influenced by other factors, such as dedication and ongoing education.

The delineation of precise results derived from assessments of clinical and academic competencies. According to the survey results, a significant majority of participants, specifically 75%, expressed that punctuality holds equal importance in both academic and clinical environments, as it serves as a demonstration of professionalism. According to the findings, a quarter of the participants expressed the view that clinical talents held greater importance within a hospital environment, as patient care emerged as the primary focal point. 7. The impact on general perceptions at a wide scale According to the findings, a significant majority of participants, specifically 90%, expressed that maintaining consistency and punctuality were essential factors contributing to a positive residency experience as well as their overall professional development.

Table 1: Thematic analysis of the study population:

Theme	Sub-themes:	Illustrative Quotes
Theme 1: Status of Punctuality and Regularity	High level of punctuality and regularity	<p>"In our ward, most PGRs are quite punctual and regular. They understand the importance of being on time for rounds and academic sessions."</p> <p>"The level of punctuality and regularity varies. Some residents are consistently on time, while others struggle to maintain it."</p> <p>"To be honest, we have very few PGRs who are frequently late or absent. It can be frustrating for the team."</p>
	Mixed levels of punctuality and regularity	
	Low level of punctuality and regularity	
Theme 2: Monitoring and Evaluation Methods	Attendance tracking systems	<p>"We have a digital attendance system. We are required to mark our presence daily, and the data is reviewed by the administration."</p> <p>"During evaluations, Supervisors provide feedback on our punctuality and regularity. It's helpful to know where we stand."</p> <p>"Our attendance is reviewed monthly. If there are any issues, we're notified, and sometimes, we have to meet with the department head."</p>
	Feedback from peers and supervisors	
	Monthly evaluations	
Theme 3: Barriers to Punctuality and Regularity	Heavy workload and long working hours	<p>"The workload can be overwhelming at times. It's challenging to be punctual when we have so much to handle in a day."</p> <p>"Transportation is a big issue for some of us, especially those who live far from the hospital. It's hard to predict traffic delays."</p> <p>"There are times when personal issues affect our ability to be regular. Family emergencies can't always be avoided."</p> <p>"Honestly, sometimes it's just difficult to stay motivated. That can lead to being less punctual."</p>
	Transportation challenges	
	Personal/family issues	
Theme 4: Warning Letters and Disciplinary Measures	Issuance of warning letters	<p>"Yes, warning letters are issued for repeated tardiness or irregular attendance. It serves as a wake-up call for some."</p> <p>"In minor cases, we receive verbal warnings from our supervisors. They try to address the issue before it escalates."</p> <p>"If someone's punctuality is consistently problematic, they may be asked to attend counseling sessions to understand the reasons behind it."</p>
	Verbal warnings	
	Counseling sessions	
Theme 5: Role of Supervisors	Setting a good example	<p>"Our supervisors are usually very punctual themselves. It sets a good example for us and motivates us to be on time."</p> <p>"They understand the challenges we face and provide support when needed. They encourage us to communicate if we're facing any issues."</p> <p>"Supervisors definitely play a significant role in enforcing punctuality. They don't tolerate chronic lateness and address it promptly."</p>
	Providing guidance and support	
	Holding residents accountable	
Theme 6: Impact on Learning Behaviors	Enhanced engagement during rounds	<p>"Being punctual helps us get the most out of rounds. We don't miss important discussions and patient interactions."</p> <p>"Regular attendance in academic sessions keeps us up to date with the latest research and developments in our field."</p> <p>"Punctuality has taught us better time management. We plan our days efficiently to accommodate everything."</p>
	Active participation in academic activities	
	Improved time management skills	
Theme 7: Impact on Clinical Skills Development	Correlation with better clinical skills	<p>"There seems to be a correlation between punctuality and improved clinical skills. Regular practice makes us more competent."</p> <p>Participant</p> <p>"While being punctual is important, I believe clinical skills also depend on dedication and continuous learning."</p>
	Limited impact on clinical skills	
Theme 8: Comparison of Clinical and Academic Skills	Equal importance of punctuality in both areas	<p>"Both are crucial, but punctuality is equally important in clinical and academic settings. It reflects professionalism."</p> <p>"In a hospital setting, clinical skills are paramount. Punctuality plays a role, but it's not the sole determinant of our abilities."</p>
	Ample time for better clinical skills and check patients	
Theme 9: Overall Perceptions	Punctuality and regularity as essential qualities	<p>"Punctuality and regularity are essential qualities for a successful residency. It's something we need to take seriously."</p> <p>"The residency program is great, but there's room for improvement in how they address punctuality issues constructively."</p>

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Discussion

In the subsequent discourse pertaining to the outcomes, we shall amalgamate and scrutinize the findings derived from the analysis of themes. The purpose of this argument is to provide a comprehensive comprehension of the impact of postgraduate residents' punctuality and consistency at Nishtar Hospital Multan on their learning practices and clinical skills. In addition, the implications of the results and their relevance to the residency program will be examined. The investigation revealed that postgraduate residents assigned to the ward exhibited differing levels of punctuality and consistency. While certain individuals demonstrated punctuality and consistency in their clinical and educational engagements, others encountered difficulties in maintaining regular attendance (Knutson, 2013).

Monitoring and Evaluation: In order to establish a methodical approach for monitoring and evaluating the punctuality and consistency of residents, the hospital implemented attendance tracking systems and conducted regular supervisory assessments. The implementation of this formal evaluation system appears to have resulted in a notable enhancement in residents' comprehension and accountability regarding their attendance (De Angelis, 2018).

The research identified several prevalent hindrances that hindered individuals from adhering to punctuality and regularity. The study revealed that a demanding workload and extended work hours had a significant impact on the punctuality of residents. Additional significant factors that were documented included challenges related to transportation, personal or familial issues, and occasionally, a lack of motivation.

Measures of Punitive Nature: To address recurrent tardiness and irregular attendance, warning letters and verbal warnings were administered. Supervisors assumed a crucial role in instigating disciplinary processes when deemed necessary, with the objective of rectifying behavior and fostering punctuality (Taylor, 2021).

Influence on Learning Habits: The study findings indicated that the factors of speed and consistency positively impacted individuals' learning habits. The participants exhibited heightened levels of general interest, engagement in scholarly endeavors, and improved ability to manage their time, collectively enhancing the quality of their educational experience (Koh et al., 2017).

Although a positive association exists between punctuality and enhanced clinical abilities, several participants highlighted the impact of additional factors, including dedication and ongoing learning, on the progression of clinical skills. Rather than serving as the sole determinant, timeliness was regarded as a contributing factor (Johnson, 2017; Harris, 2019).

In the comparative analysis of clinical and academic competencies, it was observed that professionalism was exemplified by the equal importance placed on regularity and punctuality in both clinical and academic settings. The consensus among participants was that clinical abilities were accorded greater value in a hospital environment due to the prioritization of patient care and treatment (Khan et al., 2020).

General Impressions: Based on the findings, the attributes of regularity and punctuality are perceived as crucial elements for effective residency training. The participants recognized the importance of these characteristics in influencing the professionalism and dedication of residents to their work. Despite receiving positive feedback, the residency program was advised to make further improvements in addressing punctuality concerns.

The findings of the study have several implications for the residency program implemented at Nishtar Hospital Multan. Firstly, this statement emphasizes the importance of cultivating a sense of punctuality and consistency among individuals through continuous monitoring and evaluation. Furthermore, the study underscores the imperative of addressing the obstacles and challenges that have been identified in relation to timeliness, including a significant workload and limitations in transportation. Furthermore, the promotion of consistency and punctuality is contingent upon the supervisors' capacity to demonstrate leadership through personal conduct, offer guidance, and enforce accountability among residents regarding their attendance.

Conclusion

In summary, the learning habits and clinical skill development of postgraduate residents are greatly influenced by the factors of timeliness and regularity. The findings underscore the importance of addressing attendance-related concerns and implementing targeted interventions to foster a culture of consistent attendance and punctuality within the residency program. By implementing this approach, Nishtar Hospital Multan has the potential to enhance the educational process comprehensively and foster a more dedicated and competent cohort of postgraduate residents.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

Approved

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Conflict of interest

The authors declared absence of conflict of interest.

Author Contribution

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Conception of Study, Development of Research Methodology Design, Study Design,, Review of manuscript, final approval of manuscript

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References

Accreditation Council for Graduate Medical Education. (2021). ACGME common program requirements. Retrieved from https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRs_2021-07-01.pdf

Bertman, S. (2017). Professionalism in graduate medical education. *Journal of Graduate Medical Education*, 9(2), 143-145.

Koh, G. C. H., Khoo, H. E., Wong, M. L., Koh, D., & Lee, J. J. M. (2017). The effects of problem-based learning during medical school on physician competency: A systematic review. *CMAJ Open*, 5(3), E576-E583.

Koh, J., Ng, C. S., & Naing, L. (2017). What determines the acquisition of clinical skills? *Annals of the Academy of Medicine, Singapore*, 46(8), 355-365. doi: 10.11622/smedj.2017101

Kumar, M., Agrawal, M., & Jain, A. (2017). Attendance and academic performance in undergraduate medical students: A cross-sectional study. *International Journal of Applied and Basic Medical Research*, 7(1), 44-47. doi: 10.4103/2229-516X.198525

Kumar, S. S., Srikanth, K., & Prasad, R. K. (2017). Regular attendance and academic performance in undergraduate medical students. *Indian Journal of Physiology and Pharmacology*, 61(1), 56-59.

Mokhtar, A. H., Halim, N. D., Rajalingam, S., & Hassan, N. M. (2019). Academic performance and punctuality among medical students. *Journal of Taibah University Medical Sciences*, 14(6), 537-542. doi: 10.1016/j.jtumed.2019.07.002

Shahzad, A., Shaikh, S., Ahmed, S., Ahmed, F., & Ahmed, M. (2018). Challenges faced by postgraduate medical residents in clinical training in Pakistan

Alsalem, A. (2020) 'Current Practices and Existing Gaps of Continuing Medical Education among Resident Physicians in Abha City, Saudi Arabia', *mdpi.com* [Preprint]. Available at: <https://www.mdpi.com/891702> (Accessed: 16 May 2023).

Alsawyid, B. et al. (2021) 'Effectiveness and Preparedness of Institutions' E-Learning Methods During the COVID-19 Pandemic for Residents' Medical Training in Saudi Arabia: A Pilot Study', *Frontiers in Public Health*, 9. Available at:

<https://doi.org/10.3389/FPUBH.2021.707833/FULL>.

Baker, R.T. et al. (2020) 'Expanding access to health care: Evaluating project Extension for Community Health Care Outcomes (ECHO) Idaho's tele-education behavioral health program.', *psycnet.apa.org* [Preprint]. Available at: <https://doi.org/10.1037/rmh0000157>.

Boniface, H. (2019) 'A longitudinal curriculum in point-of-care ultrasonography improves medical knowledge and psychomotor skills among internal medicine residents', *Taylor & Francis* [Preprint]. Available at: <https://www.tandfonline.com/doi/abs/10.2147/A.MEP.S220153> (Accessed: 16 May 2023).

Boniface, M.P. et al. (2019) 'A longitudinal curriculum in point-of-care ultrasonography improves medical knowledge and psychomotor skills among internal medicine residents', *Advances in Medical Education and Practice*, 10, pp. 935-942. Available at: <https://doi.org/10.2147/AMEP.S220153>.

Cetnar, A.J. (2021) 'Model for implementation of a modern journal club in medical physics residency programs', *Journal of Applied Clinical Medical Physics*, 22(6), pp. 253-261. Available at: <https://doi.org/10.1002/ACM2.13250>.

Chou, C.L. et al. (2019) 'Guidelines: The dos, don'ts and don't knows of remediation in medical education', *Perspectives on Medical Education*, 8(6), pp. 322-338. Available at: <https://doi.org/10.1007/S40037-019-00544-5>.

Chou, K. (2019) 'Guidelines: The dos, don'ts and don't knows of remediation in medical education', *Springer* [Preprint]. Available at: <https://link.springer.com/article/10.1007/s40037-019-00544-5> (Accessed: 16 May 2023).

Hau, W. (2020) 'Impact of the COVID-19 pandemic on student and resident teaching and training in surgical oncology', *mdpi.com* [Preprint]. Available at: <https://www.mdpi.com/869408> (Accessed: 16 May 2023).

Hoofman, E. (2021) 'The effect of COVID-19 on education', *pediatric.theclinics.com* [Preprint]. Available at: [https://www.pediatric.theclinics.com/article/S0031-3955\(21\)00086-9/abstract](https://www.pediatric.theclinics.com/article/S0031-3955(21)00086-9/abstract) (Accessed: 16 May 2023).

Jonge, J. (2020) 'Supervisors' intention to observe clinical task performance: an exploratory study using the theory of planned behaviour during postgraduate medical training', *bmcmededuc.biomedcentral.com* [Preprint]. Available at: <https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-020-02047-y> (Accessed: 16 May 2023).

De Jonge, L.P.J.W.M. et al. (2020) 'Supervisors' intention to observe clinical task performance: An exploratory study using the theory of planned behaviour during postgraduate medical training', *BMC Medical Education*, 20(1). Available at: <https://doi.org/10.1186/S12909-020-02047-Y>.

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- Kaul, M. (2021) 'Medical education during the COVID-19 pandemic', *Elsevier* [Preprint]. Available at: <https://www.sciencedirect.com/science/article/pii/S0012369220355148> (Accessed: 16 May 2023).
- Kearney, C.A. and Graczyk, P.A. (2020) 'A Multidimensional, Multi-tiered System of Supports Model to Promote School Attendance and Address School Absenteeism', *Clinical Child and Family Psychology Review*, 23(3), pp. 316–337. Available at: <https://doi.org/10.1007/S10567-020-00317-1>.
- Kearney, G. (2020) 'A multidimensional, multi-tiered system of supports model to promote school attendance and address school absenteeism', *Springer* [Preprint]. Available at: <https://link.springer.com/article/10.1007/s10567-020-00317-1> (Accessed: 16 May 2023).
- Khan, Lodhi (2019) 'Does Absenteeism Affect Academic Performance Among Undergraduate Medical Students? Evidence From "Rashid Latif Medical College (RLMC)."', *ncbi.nlm.nih.gov* [Preprint]. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6897060/> (Accessed: 16 May 2023).
- Khan, Latif (2019) 'Does Absenteeism Affect Academic Performance Among Undergraduate Medical Students? Evidence From "Rashid Latif Medical College (RLMC)."', *Taylor & Francis* [Preprint]. Available at: <https://www.tandfonline.com/doi/abs/10.2147/A.MEP.S226255> (Accessed: 16 May 2023).
- Renaud, C.J. et al. (2021) 'Impact of COVID-19 on health profession education in Singapore: Adoption of innovative strategies and contingencies across the educational continuum', *medicine.nus.edu.sg*, 6(3), p. 15. Available at: <https://doi.org/10.29060/TAPS.2021-6-3/RA2346>.
- Saeed, S. et al. (2021) 'Should attendance for preclinical simulation and clinical education be mandatory?', *Wiley Online Library*, 85(10), pp. 1655–1663. Available at: <https://doi.org/10.1002/jdd.12701>.
- Salzman, J. et al. (2021) 'Effects of voluntary attendance patterns on first-year medical students' wellness and academic performance during COVID-19', *Advances in Physiology Education*, 45(3), pp. 634–643. Available at: <https://doi.org/10.1152/ADVAN.00071.2021>.



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