

Time management of Internal Medicine medical residents, São Paulo, Brasil

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SUMMARY

INTRODUCTION: *Medical Residency is a recognized form of professional qualification, but there are criticisms regarding the overload of work activities. Given the length of the daily and weekly workdays, residents develop practices that enable them to reconcile the Residency with their personal life.*

AIM: *To describe time management strategies in the daily routine of Internal Medicine Medical Residents of a university hospital in São Paulo, Brasil.*

METHODS: *Eight interviews were conducted with resident physicians of the second year, addressing aspects of personal and family life, theoretical study, practical activities, and work bonds. Content analysis was carried out using the MaxQDA software.*

RESULTS: *Six thematic categories emerged from the reports: work organization at the Medical Residency; learning and/or professional activities; housing, financial planning, and household activities; time for leisure and interpersonal relationship; family planning/children; rest/sleep.*

DISCUSSION: *Several strategies are adopted for time management: residing near the hospital, domestic activities helped by housekeepers, postponement of maternity leave, and social support centered on interacting with other residents. There are paid activities not associated with the Residency, which lead to reduced time for rest, study, and leisure, with a greater loss during work at night shifts.*

CONCLUSIONS: *Residents experience a period of intense learning, which requires a high workload and complex work. The evaluation of the work organization of medical residents should include not only time for rest but also time management strategies for daily activities, which can reduce the negative outcomes associated with long working hours.*

KEYWORDS: *Internship and Residency. Shift Work Schedule. Time management.*

INTRODUCTION

A physician can participate in a graduate program called Medical Residency. This program, when fulfilled entirely in a single specialization, confers the title of specialist¹. This stage is characterized by a period of “immersion” in the professional activity, with many hours of work and study, caring for patients in complex situations².

In 2017, there were 35,187 physicians enrolled in Residency, in 6,574 programs of 790 institutions; 40% of these were specializing in four areas (Internal Medicine, Pediatrics, General Surgery, and Obstetrics and Gynecology); 34.5% of the resident physicians were in São Paulo³.

The bond with the hospital it is educational, but the

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resident can work in other institutions in their free time, although this is not recommended⁴. In Brasil, the Law 6,932 of 1981 establishes a maximum of 60 weekly work hours, included 24-hour shifts, with at least one day of rest⁵.

Working at night schedules can lead to worsened performance, increased risk of incidents in the workplace, and the worker's exposure to environmental stressors that can lead them to premature labor incapacity^{6,7}.

Time management can be understood as the ability to plan which activities should be carried out, how, and when. This planning involves establishing priorities and strategies to achieve them⁸.

In view of the multiple activities carried out by residents, it is important to understand what are the time management strategies adopted, as well as the repercussions of long workdays.

METHODS

Eight physicians of the 2nd year of residency at the Medical Clinic of a public university hospital, located in São Paulo, Brasil, were interviewed. They reported their activities over the previous year and how they interfered in their lives. The interviews were recorded and transcribed.

The data were categorized and analyzed using the MaxQDA software⁹. This research obtained the consent of the Committee of Medical Residency of the Hospital studied and was approved by the Research Ethics Committee of FSP-USP. The participants signed the informed consent form, drawn up according to the 466/2012 resolution of the National Council of Research Ethics¹⁰.

RESULTS

The average age of the participants was 27 years old, with no children; four were men. Three participants reported taking drugs for anxiety or depression (Table 1).

The activities included in the residency program are divided between outpatient internships (in which patients are treated on scheduled appointments), emergency internships (patients with acute conditions), internships in hospital wards (patients who are hospitalized in less serious conditions), and in Intensive Care Units or intermediaries (hospitalized patients in more severe conditions). The categories selected are described in Table 2.

Work organization

About the main reports on the ICU internship were: high workload and the occasional need to work night shifts after daytime work. There was a sharp reduction of performance at night and during the group discussions that followed the shift.

In the wards, the activities ceased at around 3 pm. One of the residents stayed until the 15 pm, and another was on duty during the night and was off-duty the following morning, after evaluating the patients with the other residents and the supervisor.

Emergency care was considered stressful. On these shifts, physicians reported an absence of rest time and the need to be constantly alert.

There are two months of elective internships, in which the residents choose where they wish to intern. During this period there are night shifts in case of any incidents in the hospital wards.

The Intensive Therapy Units, intermediaries, and emergency rooms presented high demands of time

TABLE 1. CHARACTERISTICS OF THE RESIDENTS WHO PARTICIPATED IN THE STUDY, SÃO PAULO, BRASIL, 2018.

Participant identification	Age	Gender	Participated in the first stage	Medications in use	Children?
P1	27	Male	Yes	No	No
P2	26	Female	Yes	No	No
P3	27	Female	Yes	Alprazolam	No
P4	28	Male	Yes	No	No
P5	26	Female	Yes	No	No
P6	27	Male	Yes	Venlafaxine	No
P7	28	Male	Yes	No	No
P8	25	Female	Yes	Fluoxetine	No

Source: Study data. São Paulo, 2018.

TABLE 2. SUMMARY OF THE CATEGORIES SELECTED FOR THIS STUDY, SÃO PAULO, BRASIL, 2018.

Categories	Context addressed by the category
Work organization	Explanations about the activities performed in the various stages of Internal Medicine Residency
Learning or professional activity?	Addressing the conflict between the educational bond and the work of the medical practice
Housing, financial planning, and domestic activities	Reports explaining how the choice of housing is made, how it is maintained, and how it affects financial planning
Time for leisure and interpersonal relationships	How the resident deals with the time available for leisure and with interpersonal relationships of everyday life
Family planning/children	What are the resident's plans regarding children and what governs these decisions
Rest/sleep	Reports about the time to rest/sleep and the perception of its quality

Source: Study data. São Paulo, 2018.

and complexity, which did not happen in the outpatient, elective, and hospital ward internships.

On the demands of complex situations and with critical patients: despite being an important stage of the training, the way it was done was considered inappropriate.

“[...] in the ICU, a stage that traumatized my whole group, we lost many patients... These were very complex cases [...] the worse one was when I had to tell the father of a 19-year-old patient that his son was brain dead! [...] the work hours are demanding, but the worst part was having to live with these stories, with these patients” (P6).

The work hours are often cited as a stressful and tiring factor, which can lead to inappropriate professional behavior. There is a clear perception of worsening quality of service, the longer the work hours. Tiredness appears as a crucial factor, impacting medical decisions and the doctor-patient relationship.

“[...] sometimes there is a moment you are not able to think anymore, you lose your reasoning ability! Sometimes, you give the wrong dose of a medication because of sleepiness. The night shifts usually last 24 hours, because you're on the Residency during the day and then you have the night shift, so the performance is affected for the worst [...]” (P7).

The day off after the night shift is usually respected (CNRM Resolution No. 4, 2011¹¹). However, in some internships, the night shift is extended beyond the usual hours due to the evaluation of patients and discussion of cases. Due to the reduced free time at some internships, the time you would use to rest ends up being used for other activities.

“[...] after the night shift you have the day off, but

you don't sleep because it is daytime and you have things to do... We are not able to rest much during the day” (P3).

“[...] the next day you have post-shift duties, so there was no time in between the night shift and other shifts at other places” (P5).

Learning or professional activity?

The boundaries between learning activities and the use of resident labor are thin.

“Often you feel like you are working... without the assistance that you expected, you feel like you are just working a regular job” (P6).

In an effort to support resident physicians, the Medical Clinic has a mentoring program, in which each tutor counsels some residents in monthly meetings in order to check how they are adjusting to the Residency, assist in the program progress or with personal issues. The residents reported this initiative positively, demonstrating an approximation of the institution/teachers with the student and generating opportunities for sharing experiences and talking.

“[...] we meet to discuss ethical and work issues and everything else. It ends up being an environment where we can talk about things that had an impact on us [...] it is an opportunity to talk things out [...]” (P6).

Housing, financial planning, and domestic activities
All the residents live near the hospital where they study due to the journey time between the workplace and their home. Meals during the internship periods are had almost exclusively in the hospital cafeteria, both due to cost and time. Usually receive aid for domestic activities in the form of housekeepers.

The Residency pay is approximately 1/6 of the

amount these professionals would get if they were hired under the CLT system. As an alternative, the residents fit other jobs into their free time, which compromises the use of that time for leisure, relaxation, or study activities.

“When you add up the shifts from other places, the workload gets heavy, it is particularly physically demanding, but also because we would like some free time to see friends, to go home... But we have to afford to live in São Paulo; we need to work in other places too [...]” (P7).

Time for leisure and interpersonal relationships

There are difficulties in reconciling time between practical activities, study hours, leisure, domestic activities, interpersonal relationships, and other paid activities. In this stage, the intern’s schedule undergoes a restructuring, which is generally followed by complaints of chronic fatigue.

“[...] Residency is about adapting to the lack of time. For most of the day you are in the hospital, so you have to adapt your schedule: decreasing gym time, sleeping later so you can spend some time with the boyfriend [...] you end up learning to accept and adapt” (P5).

Often, the time that was supposed to be rest time is sacrificed to allow some time for leisure, social obligations, or romantic relationships.

“It was a good month, but I had less interaction with the rest of my life, you know? [emergency internship]. I spent less time with my girlfriend, did less physical activity... it was one of the months when I saw my family the least ... A month of a lot of sacrifice in my personal life.” (P12).

Family planning/children

In order to maintain relationships, residents reported the need to adapt to their routine. In many cases, the relationship with other physicians facilitates the understanding of this dynamic. Seven of the interviewees were unmarried and without children. One of the residents was married and was awaiting the birth of a son who, according to him, had not been planned. It is striking the discourse of the four women saying the impossibility of having children due to the amount of study required for the specialization test and/or for the Residency.

“[...] I do not see myself studying for a difficult test with a small child at home. I know it would not work out.” (P2, fem.).

There are reports of the only married resident, whose wife is also a resident in Pediatrics and was awaiting the birth of their son. This participant realized there was, in fact, no support or institutional strategy to deal and cope with pregnant medical residents.

Rest/sleep

The time available for rest is scarcer in emergency care and Intensive Care Units. In hospital wards and outpatient clinic internships, this time was reported as being more appropriate.

Sleep deprivation and fatigue have on tasks, and the tension experienced in the internship is often externalized in dreams and as sleep difficulties. There are several reports of the use of coffee and energy drinks as stimulants.

“[...] there are many patients, and you are not able to see them properly, so I felt guilty. I would finish my shift and stay there dealing with things that I had not had time to do during the day. There were several nights when I left the emergency room at 11 pm. I sometimes got five hours of sleep, but I was stressed, worried. The stress of the internship affected the quality of my sleep for the worse [...] daytime naps were very frequent, which, in my opinion, are not very restful.” (P12).

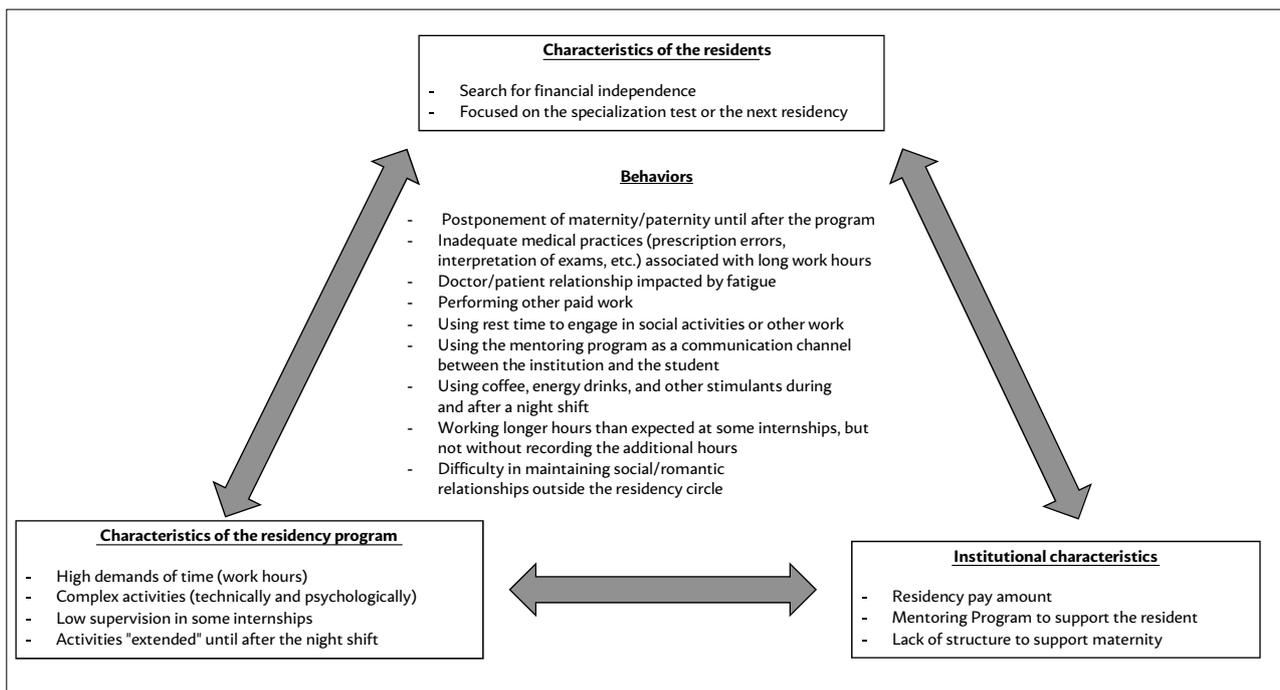
DISCUSSION

Reconciling work and personal life is the result of adopting time management strategies. These allow residents to handle more appropriately with the long work hours. This frequently happens because the activity extends beyond the planned time due to interferences and ward visitations. The main characteristics and behaviors reported by residents are described in Figure 1.

Several studies have shown a high incidence of mental disorders in residents, usually associated with highly demanding work in the face of complex situations¹²⁻¹⁴, long work hours, lack of control over work processes, and patient consultations¹⁵. The mentoring program to residents works as a support for dealing with these demands.

Night work can lead to a worsened performance and increased risk of incidents, and it is also associated with various chronic diseases⁶. There were reports of worsened performance, including incidents that could compromise patient safety. In line with studies on sleep deprivation, the effects are mental psychological,

FIGURE 1



and physical exhaustion, with a decreased ability of reasoning, retention of information, problem-solving, including the interpretation of exams and errors in drug prescription¹⁶⁻¹⁸.

A survey conducted in the United Kingdom¹⁹ with Anesthesiology residents showed that fatigue resulting from the program, even with reduced work hours (from 56 to 48 hours per week), interfered in the psychological well-being, physical health, and personal relationships; these interferences were maximized on the night shift.

Medical residents reported night shift difficulties, like falling and staying asleep, in addition to the perception of restless sleep and the desire to have more time off for other activities^{6,16,20}.

All participants were involved in other paid activities unrelated to the Residency. There are several factors that cause this: time management strategies that increase the cost of living (housing near the education institution, food in restaurants, hiring housekeepers), need for financial independence, and the current Residency pay.

Shift workers, especially those who work the night shift, have a different routine from the rest of the community, leading to greater difficulties with friends and family^{16,20,21}. This difficulty is described due to the number of hours and complexity of the internships, and it is worse in during times of night work.

Asaiag et al.²² stated that the residents perceived

their quality of life is worse during the Residency than in other study times; the same was found in this study.

There are difficulties concerning the limited free time to maintain relationships with relatives and friends, reports of friendships and support among the residents, and difficulties in reconciling romantic relationships. It is worth noting that social support is important to prevent mental disorders^{23,24}.

The complexity and severity of the patients, the management of delicate work conditions, and the feeling of powerlessness when faced with the lack of resources were mentioned as factors of psychological burden. These are added to the physical overload due to the long working hours^{2,25}. These constraints were mainly observed in the emergency room and intensive care unit internships.

Despite being contradictory, the residents acknowledge these factors of psychological burden as necessary for their training. The emergency room internship presents high overhead, but it is associated with a time of great responsibilities, when the residents feel useful and rewarded.

CONCLUSION

Internal Medicine residents experience a period of intense learning that demands long hours of complex activities.

The strategies reported for time management

were: living near the hospital; hiring housekeepers to assist in domestic activities; eat most of the meals at the hospital cafeteria; postpone motherhood/paternity for after the Residency; use of the time available for leisure activities, family and romantic relationships, at the cost of rest time; social support focused on relationships with fellow residents and program supervisors.

The institutional strategies of social support, such as the mentoring program, were considered positive elements that facilitated the communication between residents and supervisors. There is a important to

evaluate with the Residency supervisors their perception of the constraints mentioned by the study participants and the possible measures to reduce their impacts.

Author Contributions

Rafael A. T. Torres: participated in the study design, data collection, data analysis and writing the manuscript.

Frida M. Fischer: supervised the study, participated actively in the project design, discussion of the results, writing and revising the manuscript.

RESUMO

INTRODUÇÃO: A Residência Médica é uma forma reconhecida de capacitação profissional, mas há críticas em relação à sobrecarga de trabalho. Dada a extensão das jornadas de trabalho diária e semanal, os residentes desenvolvem práticas para poder conciliar a Residência com sua vida pessoal.

OBJETIVOS: Descrever estratégias de gestão do tempo no cotidiano de médicos residentes de Clínica Médica em hospital universitário de São Paulo, Brasil.

MÉTODOS: Realizadas oito entrevistas com médicos residentes do 2º ano, abordando aspectos da vida pessoal, familiar, estudo teórico, atividades práticas e vínculos de trabalho. Realizada análise de conteúdo com auxílio do programa MaxQDA.

RESULTADOS: Seis categorias temáticas emergiram dos relatos: organização do trabalho na Residência Médica; atividade para aprendizado ou atividade profissional?; moradia, planejamento financeiro e atividades domésticas; tempo para lazer e relacionamentos interpessoais; planejamento familiar/filhos; repouso/sono.

DISCUSSÃO: Diversas estratégias são adotadas para gestão do tempo: residir próximo ao hospital, auxílio das atividades domésticas por diaristas, adiamento da maternidade e apoio social centrado no convívio com outros residentes. Há realização de atividades remuneradas não vinculadas à Residência, o que leva à redução do tempo previsto para repouso, estudo e lazer, com maior prejuízo nos períodos de plantões noturnos.

CONCLUSÕES: Os residentes vivenciam um período de aprendizado intenso, mas que exige uma carga horária elevada e trabalho complexo. A avaliação da organização do trabalho de médicos residentes deve incluir não somente tempo para repouso, mas também estratégias de gestão do tempo para atividades cotidianas. Estas podem reduzir o prejuízo associado às longas jornadas de trabalho.

PALAVRAS-CHAVE: Internato e Residência. Jornada de trabalho em turnos. Gerenciamento do tempo.

REFERENCES

1. Conselho Federal de Medicina. Residência médica. [cited 2019 Jan 5]. Available from: http://portal.cfm.org.br/index.php?option=com_content&id=88&Itemid=47
2. Nogueira-Martins LA. Qualidade de vida dos médicos residentes: revisão de estudos brasileiros. *Cad ABEM*. 2010;6:12-8.
3. Sheffer M, Biancarelli A, Cassenote A. Demografia médica no Brasil 2015. São Paulo: Departamento de Medicina Preventiva da USP; Conselho Regional de Medicina do Estado de São Paulo; Conselho Federal de Medicina; 2015. [cited 2019 Jan 5]. Available from: <http://demografiamedica.org.br/project/demografia-medica-no-brasil-2015/>
4. Mota MC, De-Souza DA, Rossato LT, Silva CM, Araújo MB, Tufk S, et al. Dietary patterns, metabolic markers and subjective sleep measures in resident physicians. *Chronobiol Int*. 2013;30(8):1032-41.
5. Brasil. Presidência da República. Lei 6932 de 7 de julho de 1981. Dispõe sobre a atividade do médico residente e dá outras providências. *DOU* de 09/07/1981.
6. Moreno CRC, Fischer FM, Rotenberg L. A saúde do trabalhador na sociedade 24 horas. *São Paulo Perspect*. 2003;17(1):34-46.
7. Jay SM, Gander PH, Eng A, Cheng S, Douwes J, Ellison-Loschmann L, et al. New Zealanders working non-standard hours also have greater exposure to other workplace hazards. *Chronobiol Int*. 2017;34(4):519-526.
8. Pellegrini CFS, Calais SL, Salgado MH. Habilidades sociais e administração de tempo no manejo do estresse. *Arq Bras Psicol*. 2012;64(3):110-29.
9. MaxQDA. MaxQDA - Software für qualitative datenanalyse. VERBI Software. Consult. Sozialforschung GmbH. Available from: <http://www.maxqda.de/>. Published in 2017.
10. Brasil. Resolução no466, de 12 de dezembro de 2012. Conselho Nacional de Saúde. doi:10.1017/CBO9781107415324.004
11. Comissão Nacional de Residência Médica. Resolução CNRM N°4 de 16.06.2011 - Dispõe sobre o estabelecimento e condições de descanso obrigatório para o médico residente que tenha cumprido plantão noturno. Brasília: Comissão Nacional de Residência Médica; 2011.
12. Cabana MCFDL, Ludermer AB, Silva ÉR, Ferreira MLL, Pinto MER. Transtornos mentais comuns em médicos e seu cotidiano de trabalho. *J Bras Psiquiatr*. 2007;56(1):33-40.
13. Carvalho CN, Melo-Filho DA, Carvalho JAG, Amorim ACG. Prevalência e

- fatores associados aos transtornos mentais comuns em residentes médicos e da área multiprofissional. *J Bras Psiquiatr.* 2013;62(1):38-45.
14. Rocha SV, Almeida MMG, Araújo TM, Virtuoso Júnior JS. Prevalência de transtornos mentais comuns entre residentes em áreas urbanas de Feira de Santana, Bahia. *Rev Bras Epidemiol.* 2010;13(4):630-40.
 15. Fabichak C, Silva-Junior JS, Morrone LC. Síndrome de burnout em médicos residentes e preditores organizacionais do trabalho. *Rev Bras Med Trab.* 2014;12(2):79-84.
 16. Ribeiro CRF, Silva YMGP, Oliveira SMC. O impacto da qualidade do sono na formação médica. *Rev Soc Bras Clin Med.* 2014;12(1):8-14.
 17. Pikovsky O, Oron M, Shiyovich A, Perry ZH, Neshet L. The impact of sleep deprivation on sleepiness, risk factors and professional performance in medical residents. *Isr Med Assoc J.* 2013;15(12):739-44.
 18. Zeraatchi A, Talebian MT, Nejati A, Dashti-Khavidaki S. Frequency and types of the medication errors in an academic emergency department in Iran: the emergent need for clinical pharmacy services in emergency departments. *J Res Pharm Pract.* 2013;2(3):118-22.
 19. McClelland L, Holland J, Lomas JP, Redfern N, Plunkett E. A national survey of the effects of fatigue on trainees in anaesthesia in the UK. *Anaesthesia.* 2017;72(9):1069-77.
 20. Brown M, Tucker P, Rapport F, Hutchings H, Dahlgren A, Davies G, et al. The impact of shift patterns on junior doctors' perceptions of fatigue, training, work/life balance and the role of social support. *Qual Saf Heal Care.* 2010; 19(6):e36.
 21. Skoufi GI, Lialios GA, Papakosta S, Constantinidis TC, Galanis P, Nena E. et al. Shift work and quality of personal, professional, and family life among health care workers in a rehabilitation center in Greece. *Indian J Occup Environ Med.* 2017;21(3):115-20.
 22. Asaiag PE, Perotta B, Martins MA, Tempski P. Avaliação da qualidade de vida, sonolência diurna e burnout em médicos residentes. *Rev Bras Educ Med.* 2010;34(3):422-9.
 23. Assunção AA, Machado CJ, Prais HA, Araújo TM. Working conditions and common mental disorders in physicians in Brasil. *Occup Med (Lond).* 2013;63(3):234-7.
 24. Mikkola L, Suutala E, Parviainen H. Social support in the workplace for physicians in specialization training. *Med Educ Online.* 2018;23(1):1435114.
 25. Nogueira-Martins LA, Jorge MR. Natureza e magnitude do estresse na Residência Médica. *Rev Assoc Med Bras.* 1998;44(1):28-34.

