

# Psychological aspects and quality of life in Medical Residency.

## *Aspectos psicológicos e qualidade de vida na Residência Médica.*

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### A B S T R A C T

**Objective:** to evaluate the perception of quality of life among residents in the first year of Medical Residency compared to the one among residents in other years of training, given the importance of this issue in health. **Methods:** a comparative and cross-sectional analytical study performed from February to April 2016 in a reference tertiary trauma hospital in Brazil. Resident physicians were voluntarily submitted to an online questionnaire on quality of life (called WHOQOL-BREF), validated by World Health Organization (WHO). They were divided into two groups: first year of residency (R1) and other years of residency. **Results:** ninety-seven residents of several medical specialties answered the questionnaire. Of these, 59 were men and 38 were women. The mean age was 27.7 years. First-year residents accounted for 49.5% of the interviewees. Overall, quality of life was considered regular in both groups. In relation to psychological domain, there was a significant difference between the R1 group (with worse scores in this domain) and the non-R1 group ( $p < 0.0000001$ ). **Conclusion:** first-year residents' quality of life is worse than the one of the residents from other years, having a significant variation of positive feelings, learning capacity, memory, thought and concentration, self-esteem, body image and appearance, and negative feelings.

**Keywords:** Quality of Life. Internship and Residency. Psychological Phenomena.

### INTRODUCTION

After finishing undergraduate studies, the option for a Medical Residency Program requires extensive analysis like personal interests, personality, skills, and lifestyle in order to choose a career not only for competitiveness, but also for professional performance<sup>1</sup>. Known as Halstedian Training Model, the first formal Medical Residency Program was established in the late XIX Century by William Stewart Halsted at Johns Hopkins Hospital. Aimed at young surgeons, this program consisted of training high-quality surgeons with academic assignments. Haslsted took into account concepts of bedside rounds, deployed by Osler at the same hospital, and practices he had observed in Europe<sup>2,3</sup>.

Since then, starting from this model, numerous possibilities of specialization have been established in the world. In Brazil, there are at least 40 medical residency options, according to *Ministerio da Cultura e Educação* (Brazilian Ministry of Culture and Education)<sup>4</sup>, each of them with particularities, not only on the study field and practice, but also on the residents' quality of life and stress during this period of life.

Quality of life has been defined by World Health Organization (WHO) as "the individual's perception of his (her) position in life, in the context of culture and value systems in which he (she) lives and in relation to his (her) goals, expectations, standards, and concerns". To measure quality of life, interviews or questionnaires, such as WHOQOL-BREF (WHO Quality of Life - an abbreviated version), can be used<sup>5</sup>.

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Concerning stress, the term was defined in 1936 as “the non-specific response of the body to any demand for change.” It was observed that persistent stress could result in the development of many diseases and, since then, it has been emphasized the importance of measuring these levels, with the aim of reducing stress in people, including physicians<sup>6</sup>.

Medical residency is a great period of professional growth for physicians, but it implies much dedication and renunciation of leisure in various moments, a reality that results in significant quality of life reduction and stress increase. With this in mind, this study was carried out, from February to April 2016, with the objective of evaluating the perception of quality of life among residents in the first year of medical residency compared to the one among residents in other years of training.

## **METHODS**

A comparative and cross-sectional analytical study was performed from February to April 2016 at Hospital do Trabalhador. Residents were divided into two groups: first year of residency (R1) and other years of residency (non-R1). They were voluntarily submitted to an online questionnaire with 26 questions on quality of life (called WHOQOL-BREF), validated by World Health Organization (WHO). This quality of life measurement instrument has been established from a multicenter study involving 15 places in the world and allows the evaluation of different quality of life issues in different cultures and under different aspects (called “domains”)<sup>5</sup>. The first two questions are about general quality of life and the other 24 issues cover four domains: physical, psychological, social, and environmental.

This questionnaire is an abridged version of WHO’s questionnaire. The answers to this questionnaire are in Likert Scale, which subjectively defines, in an ascending way, extremes like “nothing”, “never”, and “very bad” (score 1), and “completely”, “always”, and “very good” (score 5).

Data analysis was performed with simple statistical percentages. Continuous variables were analyzed using Student’s t-test and discrete variables, with Chi-square test.

This study was carried out in a reference tertiary trauma hospital in Brazil with the approval of the Research Ethics Committee under number 100876.

## **RESULTS**

The sample consisted of 97 residents of several medical specialties (Figure 1). In relation to gender, 59 were men and 38 were women. The mean age was 27.7 years. First-year residents accounted for 49.5% of the interviewees. In addition, General Surgery accounted for 21.6% of the participants’ specialties, the highest prevalence (Figure 1).

Overall, quality of life was considered regular in both groups, with average ranging from 3.0 to 3.9 (Figure 2). In relation to psychological domain (positive feelings, thought, learning, memory and concentration, self-esteem, body image and appearance, and negative feelings), there was a significant difference between the R1 group (mean=3.51) and the non-R1 group (mean=3.38), with  $p<0.0000001$  (Figure 2). In relation to other aspects of quality of life, such as physical, environmental, and social ones, there was no significant difference ( $p=0.5420$ ,  $p=0.2074$ , and  $p=0.5525$ , respectively).

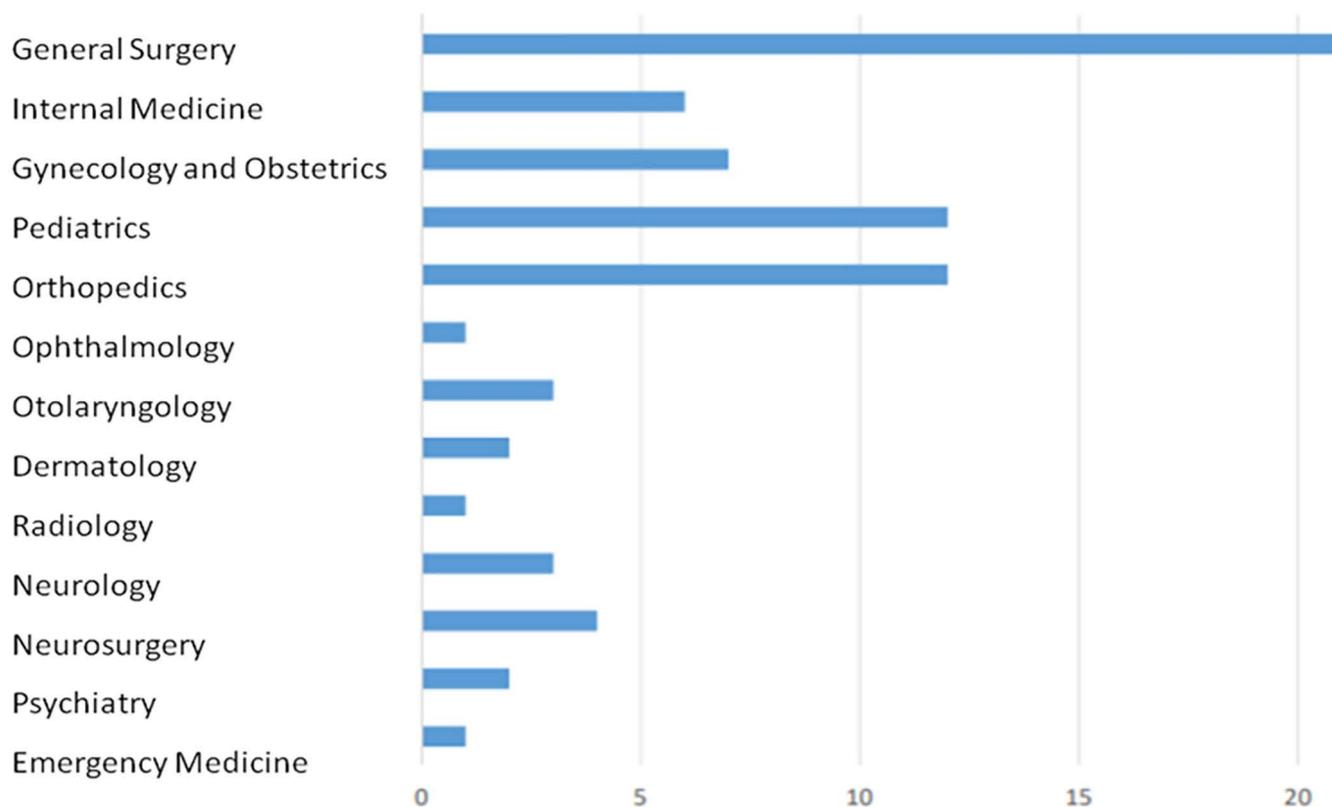


Figure 1. Participants' specialties (results in percentage).

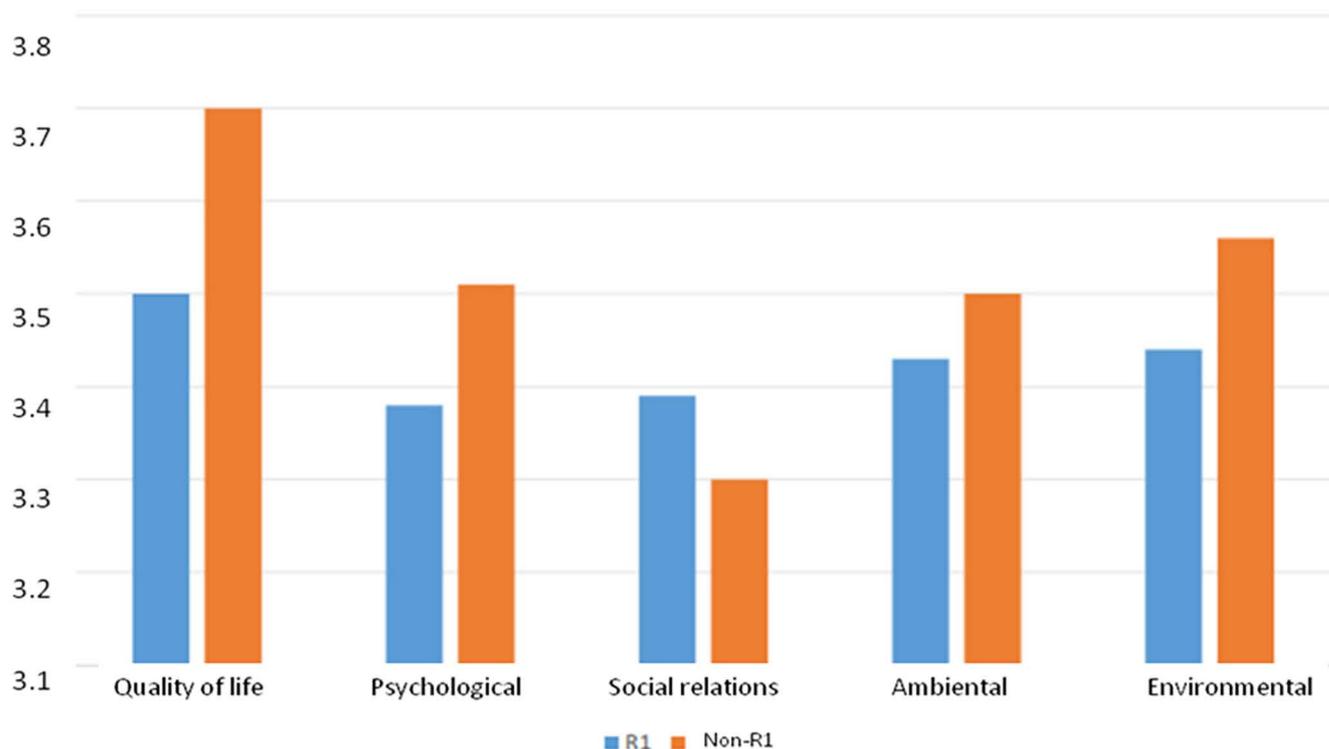


Figure 2. Domains analyzed in WHOQOL-BREF questionnaire (26 questions distributed in these five domains). The results are in Likert Scale, ranging from score 1 (representing "nothing", "never", and "very bad") to score 5 (representing "completely", "always", and "very good").

## **DISCUSSION**

Medical Residency is a milestone of great personal development for many new graduates also characterized by stress increase due to long hours of work, sleep deprivation, deterioration of social life and leisure, new roles and responsibilities towards their preceptors and society in general. This means that there is a considerable change in quality of life in this process<sup>7-10</sup>. When evaluating WHOQOL-BREF it was verified that the overall quality of life during the years of medical residency remained constant (in average, considered regular). This can be explained by the routine activity, within the scope of service operation, similar across the years of residency<sup>9-15</sup>.

When the four domains of quality of life (psychological, physical, environmental, and social areas) were separately analyzed, it was verified that there was a significant difference between the R1 group and the non-R1 group in the psychological domain ( $p < 0.0000001$ ). This means that there is an improvement in positive feelings, thought, learning, memory and concentration, self-esteem, body image, appearance, and negative feelings over the years. These data are in agreement with several other studies that show increase of daytime sleepiness and emotional exhaustion scores in the first years of medical residency and improvement in social aspects, vitality, and mental health in later years<sup>10,11,16-18</sup>.

It has already been described that residents are more susceptible to Burnout syndrome as a cumulative response to continuous occupational stressors, characterized by chronicity, interruption of adaptation, and development of negative personal achievement<sup>19</sup>. This is also associated with a series of charges from supervisors and society, multiple functions carried out together with long working hours, obligatory tasks, and greater responsibility as a professional, with high demands for competence and efficiency<sup>17</sup>.

Other published data on medical residency workload reveal that first-year residents work approximately 77.2 hours per week and residents from other years work 62.8 hours per week, which are compatible with data found in this study. This number of worked hours, however, goes against the Brazilian legislation that establishes a maximum weekly workload of 60 hours, of which 80 to 90% in the medical assistance of the service and the rest in theoretical and complementary activities<sup>20</sup>. It has already been demonstrated that reduction of residents' working hours reflects in the improvement of quality of life<sup>19,20</sup>.

The analysis of this study is in line with self-assessment data on quality of life in Medical Residency period, which is generally 6.8 on a scale of 1 to 10. As for the specific analysis, residency in Gynecology and Obstetrics presented a scale still smaller than 5 compared to other groups such as Pediatrics and Internal Medicine, with averages of 6.4 and 6.3, respectively<sup>10</sup>. Also corroborating with these comparative data on stress levels, there is a greater psychological overload in Surgical residency compared to Internal Medicine residency<sup>21</sup>.

Today, residency is still considered the gold standard of medical education specialization in the world. It requires, therefore, constant improvement of its working conditions, as it is the main source of practical learning for newly trained doctors. This demand for improvement shows that there is a crucial need to reassess residents' care and training process, aiming at improving quality of life, education, and care.

Our work showed that first-year residents' quality of life is worse than the one of the residents from other years, having a significant variation of positive feelings, learning capacity, memory, thought and concentration, self-esteem, body image and appearance, and negative feelings.

## R E S U M O

**Objetivo:** avaliar a percepção de qualidade de vida entre residentes no primeiro ano de Residência Médica em relação aos residentes de outros anos, dada a importância dessa questão na saúde. **Métodos:** estudo comparativo, transversal e analítico realizado no período de fevereiro a abril de 2016, realizado em um hospital de trauma terciário de referência do Brasil. Médicos residentes foram submetidos voluntariamente ao questionário validado da Organização Mundial de Saúde (OMS) sobre qualidade de vida, o WHOQOL-BREF, com preenchimento online. Os residentes foram divididos em dois grupos: primeiro ano de residência (R1) e outros anos de residência. **Resultados:** noventa e sete residentes de diversas especialidades médicas responderam ao questionário. Desses, 59 eram homens e 38 mulheres. A média de idade foi de 27,7 anos. Residentes do primeiro ano representaram 49,5% dos entrevistados. A qualidade de vida de maneira global foi considerada regular em ambos os grupos. Em relação ao domínio psicológico, houve diferença significativa entre o R1 (este, com piores escores neste domínio) e os demais anos de residência ( $p < 0,0000001$ ). **Conclusão:** a qualidade de vida dos residentes do primeiro ano é pior em relação aos demais, tendo uma variação significativa de sentimento positivo, capacidade de aprender, memória, pensamento e concentração, autoestima, imagem corporal e aparência e sentimentos negativos em relação aos médicos residentes dos outros anos.

**Descritores:** Qualidade de Vida. Internato e Residência. Fenômenos Psicológicos.

## REFERENCES

1. Association of American Medical Colleges [Internet]. Washington: The Association; c1995-2016 [cited 2016 May 20]. Careers in Medicine; [about 1 screen]. Available from: <https://www.aamc.org/cim/>
2. Cameron JL, William Stewart Halsted. Our surgical heritage. *Ann Surg*. 1997;225(5):445-58.
3. Polavarapu HV, Kulaylat AN, Sun S, Hamed O. 100 years of surgical educations: The past, present, and future. *Bull Am Coll Surg* [Internet]. 2013 Jul [Cited 2018 Nov 18]. Available from: <http://bulletin.facs.org/2013/07/100-years-of-surgical-education/>
4. Brasil. Ministério da Educação. Proposição de Conteúdo dos Programas de Residência Médica. Resolução CNRM nº 2/2006, de 17 de maio de 2006. Dispõe sobre requisitos mínimos dos Programas de Residência Médica e dá outras providências. *Diário Oficial, Brasília, DF, nº 95, de 19/05/06, seção 1, p. 23-36*. Acessado em 21 de maio de 2016. Disponível em: [http://portal.mec.gov.br/index.php?option=com\\_content&view=article&id=15776](http://portal.mec.gov.br/index.php?option=com_content&view=article&id=15776)
5. World Health Organization. Management of substance abuse. WHO Quality of Life-BREF (WHOQOL-BREF) [Internet]. Acessado em 27 de maio de 2016. Disponível em: [http://www.who.int/substance\\_abuse/research\\_tools/whoqolbref/en/](http://www.who.int/substance_abuse/research_tools/whoqolbref/en/)
6. The American Institute of Stress [Internet]. What is Stress? Acessado em 22 de maio de 2016. Disponível em: <http://www.stress.org/what-is-stress>
7. Cahú RAG, Santos ACO, Pereira RC, Vieira CJL, Gomes SA. Estresse e qualidade de vida em residência multiprofissional em saúde. *Rev Bras Ter Cogn*. 2014;10(2):76-83.
8. Santos AFO, Cardoso CL. Profissionais de saúde mental: manifestação de stress e burnout. *Estud Psicol (Campinas)*. 2010;27(1):67-74.
9. Fleck MP, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". *Rev Saúde Pública*. 2000;34(2):178-83.
10. Lourenção LG, Moscardini AC, Soler ZASG. Saúde e qualidade de vida de médicos residentes. *Rev Assoc Med Bras*. 2010;56(1):81-91.
11. Harris JD, Staheli G, LeClere L, Anderson D, McCormick F. What effects have resident work-hour changes had on education, quality of life, and safety? A systematic review. *Clin Orthop Relat Res*. 2015;473(5):1600-8.
12. Hutter MM, Kellogg KC, Ferguson CM, Abbott WM, Warshaw AL. The impact of the 80-hour resident workweek on surgical residents and attending surgeons. *Ann Surg*. 2006;243(6):864-71; discussion 871-5.
13. Macedo PC, Cítero V de A, Schenkman S, Nogueira-Martins MC, Morais MB, Nogueira-Martins LA. Health-related quality of life predictors during medical residency in a random, stratified sample of residents. *Braz J Psychiatry*. 2009;31(2):119-24.

14. Asaiag PE, Perotta B, Martins MA, Tempiski P. Avaliação da qualidade de vida, sonolência diurna e burnout em Médicos Residentes. *Rev Bras Educ Med.* 2010;34(3):422-9.
15. Fleck MPA. O instrumento de avaliação de qualidade de vida da Organização Mundial da Saúde (WHOQOL-100): características e perspectivas. *Ciênc Saúde Coletiva.* 2000;5(1):33-8.
16. Whang EE, Mello MM, Ashley SW, Zinner MJ. Implementing resident work hour limitations: lessons from the New York State experience. *Ann Surg.* 2003;237(4):449-55.
17. Shanafelt TD, West C, Zhao X, Novotny P, Kolars J, Habermann T, et al. Relationship between increased personal well-being and enhanced empathy among internal medicine residents. *J Gen Intern Med.* 2005;20(7):559-64.
18. Rossi AM, Perrewe PL, Sauter SL. Stress e qualidade de vida no trabalho: perspectivas atuais da saúde ocupacional. São Paulo: Atlas; 2012.
19. Cohen JS, Patten S. Well-being in residency training: a survey examining resident physician satisfaction both within and outside of residency training and mental health in Alberta. *BMC Med Educ.* 2005;5:21.
20. Brasil. Ministério da Educação. Comissão Nacional de Residência Médica. Resolução CNRM nº 05, de 2002. Dispõe sobre critérios mínimos para credenciamento de programas de Residência Médica (inclui e normatiza os Programas de Residência em Medicina de Família e Comunidade). Diário Oficial, Brasília, DF, 23 dez. 2003. Seção 1. Acessado em 20 de maio de 2016. Disponível em: <http://portal.mec.gov.br/sesu/arquivos/pdf/CNRM052002.pdf>
21. Abreu-Reis P, Nasr A, Tomasich FS, Collaço IA, Bassani T, Clivatti GM, et al. At the Razor's Edge: Surgeons have Lower Stress Levels than the General Population. *Panamerican J Trauma Critical Care Emerg Surg.* 2016;5(1):26-30.

Received in: 10/30/2018

Accepted for publication: 12/11/2018

Conflict of interest: none.

Source of funding: none.

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