

## HEALTH AND QUALITY OF LIFE OF MEDICAL RESIDENTS

LUCIANO GARCIA LOURENÇÃO<sup>1\*</sup>, AIRTON CAMACHO MOSCARDINI<sup>2</sup>, ZAIDA AURORA SPERLI GERALDES SOLER<sup>3</sup>

Study conducted at the São José do Rio Preto School of Medicine – FAMERP, São José do Rio Preto, SP, Brazil

## ABSTRACT

**OBJECTIVE.** To discuss the health and quality of life of medical residents.**METHODS.** Literature review analyzing the content of studies about the subject at hand. Sources for this search consisted of: Biblioteca Virtual em Saúde (BVS [Virtual Science Library]), via BIREME (Latin American and Caribbean System on Health Sciences Information); electronic databases Medline (Medical Literature Analysis and Retrieval System On-Line), Lilacs (Latin American and Caribbean Health Science Literature Database), and SciELO (Scientific Electronic Library On Line); and the search engine scholar.google.com.br. The following descriptors were used: quality of life, stress, internship, and residency, in English and in Portuguese. The bibliography collected in the process was then sorted and analyzed to assess and discuss the primary aspects of the subject, considering which countries the studies came from, when they were published, source, title, focus of study, and primary conclusions.**RESULTS.** The studies analyzed showed key results and conclusions, such as high rates of burnout syndrome, stress, depression, fatigue, and sleep disorders among residents; problems coping; correlation between duty hours and quality of life; and the need to better regulate medical residency to improve work and educational conditions.**CONCLUSION.** Implementing resident assistance programs leads to improvements in professional education and personal quality of life, improving relationships with patients. Though stressful, medical residency is an enriching experience, providing professional and personal development for physicians.

KEY WORDS: Quality of life. Stress. Internship and residency.

## \*Correspondência:

Rua São Luiz, 440 - Apto 52-J

Jardim Europa - São José do Rio Preto/SP - Brazil  
CEP: 15.014-470Phone/Fax: +55 (17)  
3304-9318

luciano\_gl@ig.com.br

## INTRODUCTION

Medical residency is a training process during which residents should find a balance between the will to care and heal, handling the feeling of helplessness before the complex health care system they are inserted, and establishing the limits of their own personal and professional identity.<sup>(1)</sup>

The practice of medicine has intrinsic characteristics which, by themselves or in combination, define a professional environment consisting of the emotional stimuli accompanying the process of becoming sick. Stimuli include frequent contact with pain and suffering, handling physical and emotional intimacy, caring for terminal patients, and handling difficult, whiny, rebellious, uncooperative, demanding, self-destructive, and/or chronically depressed patients, as well as handling the uncertainties and limitations of medical knowledge and the health care system, which clash with demands and expectations from patients and family members, who want nothing but certainty and assurances<sup>(2,3,4)</sup>.

Various determining factors impact the health and quality of life of medical residents. In that context, assessing their quality of life (QOL) helps support actions aimed at improving the personal and professional quality of life of residents. Consequently, the process helps ensure improvements in service quality for patients.

Quality of life depends on intrinsic and extrinsic factors. Therefore, because of their places in society, quality of life means something unique for each individual. This means we cannot standardize quality of life, as it has different meanings for different individuals, depending on their objectives, goals and intentions<sup>(5)</sup>. QOL cannot be measured solely in terms of how long someone lives, because various factors can influence it, such as health, housing, work, leisure, and satisfaction, among others<sup>(6)</sup>.

This article discusses the issue of the health and quality of life of medical residents, making considerations about the literature on the subject.

1. Coordenador do Curso de Enfermagem da União das Faculdades dos Grandes Lagos –UNILAGO; Docente da União das Faculdades dos Grandes Lagos - UNILAGO e da Fundação Municipal de Educação e Cultura de Santa Fé do Sul –FUNEC e Coordenador da Vigilância Epidemiológica do município de São José do Rio Preto, São José do Rio Preto, SP
2. Docente e orientador da graduação e pós-graduação da Faculdade de Medicina de São José do Rio Preto –FAMERP, São José do Rio Preto, SP
3. Livre-Docente do Departamento de Enfermagem em Saúde Coletiva e Orientação Profissional; Docente e Orientadora da graduação e pós-graduação; Diretora Adjunta de Extensão de Serviços à Comunidade da Faculdade de Medicina de São José do Rio Preto –FAMERP, São José do Rio Preto, SP

## METHODS

This study reviews the literature about health and quality of life of medical residents, as well as studies connected to the subject, and analyzes study content in terms of the issue.

Sources for this search consisted of: Biblioteca Virtual em Saúde (BVS [Virtual Health Library]), via BIREME (Latin American and Caribbean System on Health Sciences Information); electronic databases Medline (Medical Literature Analysis and Retrieval System On-Line), Lilacs (Latin American and Caribbean Health Science Literature Database), and SciELO (Scientific Electronic Library On Line); and the search engine scholar.google.com.br. The following descriptors were used: quality of life, stress, internship, and residency.

The bibliography collected in the process was then sorted and analyzed to assess and discuss the primary aspects of health and quality of life of medical residents in the studies, considering which countries the studies came from, when they were published; for each study, the review considered source, title, focus of study, and primary conclusions.

## RESULTS

Forty two studies about health and quality of life of medical residents or connected to the subject were selected and analyzed, comprehending 38 (90.48%) articles, two (4.76%) doctoral dissertations, one (2.38%) master's thesis, and one (2,38%) editorial.

Table 1 shows the distribution of studies by country of origin of authors, showing that 37 (88.10%) studies come from the Americas, 16 of which (38.10%) from Brazil.

In terms of year of publication, we see an increase in the number of studies starting in the 1990s. The increase grows even stronger in 2004, as shown by Table 2.

Table 3 shows the distribution of studies by source/title, focus of study, and conclusions. We find that studies in this review discussed subjects such as burnout syndrome, sleep, stress and fatigue, coping strategies, and quality of life and duty hours of residents, as well as how residents see their education. The studies analyzed showed key results and conclusions, such as high rates of burnout syndrome, stress, depression, fatigue, and sleep disorders among residents; problems coping; correlation between duty hours and quality of life; and the need to better regulate medical residency to improve work and educational conditions.

**TABLE 1 - Distribution of studies by country of origin**

COUNTRY	Number	%
Brazil	16	38.10
United States	14	33.34
Venezuela	04	9.52
Canada	02	4.76
Peru	01	2.38
Switzerland	01	2.38
Germany	01	2.38
Belgium	01	2.38
Ireland	01	2.38
Spain	01	2.38
<b>TOTAL</b>	<b>42</b>	<b>100</b>

**Table 2 - Distribution of studies by period/year of publication**

Period/Year of Publication	Number	%
<b>1970s</b>	<b>1</b>	<b>2.38</b>
1979	1	2.38
<b>1980s</b>	<b>1</b>	<b>2.38</b>
1986	1	2.38
<b>1990s</b>	<b>7</b>	<b>16.66</b>
1991	1	2.38
1993	1	2.38
1994	1	2.38
1996	1	2.38
1997	1	2.38
1998	2	4.76
<b>2000s</b>	<b>33</b>	<b>78.58</b>
2000	1	2.38
2001	1	2.38
2002	1	2.38
2003	2	4.76
2004	3	7.15
2005	7	16.66
2006	9	21.43
2007	6	14.29
2008	3	7.15
<b>TOTAL</b>	<b>42</b>	<b>100</b>

## DISCUSSION

In reviewing the literature about health and quality of life of medical residents, we find that studies about the subject increase significantly from 2004 onwards, with many studies written by Brazilian (38.10%) and American (33.34%) authors. The primary issues discussed are burnout syndrome, sleep disorders, stress, fatigue, and life and work coping strategies.

Considering medical residencies are teaching programs defined by full-time training under supervision, they are the best method available for enhancement and specialization in the health sciences.

It is well known that residents experience various types of stress during training, and that such stress factors can cause harmful effects on residents, impacting quality of patient care.

For Tokarz et al.<sup>7</sup>, factors such as student-doctor transition, professional responsibility, social isolation, fatigue, sleep deprivation, overwork, fear of committing mistakes and other factors connected to the residency educational process are associated with psychological, psychopathological and behavioral responses, including depressive states accompanied by suicidal thoughts, excess alcohol consumption, drug addiction, chronic anger and the development of bitter skepticism and gallows humor, turning medical residents into a high risk group for emotional conditions.

According to Lima et al.<sup>8</sup>, medical residents can be more susceptible to burnout syndrome (defined by Maslach<sup>(9)</sup> as a cumulative reaction to continuous occupational stress factors, characterized by severity, disruption of adaptation, development of negative attitudes and behaviors leading to lower personal achievement at work) because they have to answer to demands

**TABLE 2 - Distribution of studies by period/year of publication**

SOURCE/TITLE	FOCUS OF STUDY	CONCLUSIONS
Patient Educ Couns. 2008 Aug;72(2):194-200 Well-being in residency: effects on relationships with patients, interactions with colleagues, performance, and motivation	Well-being in medical residency	Education during residencies and patient care could improve with actions promoting the well-being of medical residents.
BMJ. 2008 Mar;336(7642):448-91 Rates of medication errors among depressed and burnt out residents: prospective cohort study	Depression and burnout among pediatrics residents	Depressed residents make six times as many errors as nondepressed residents.
Acta Clin Belg. 2008 Nov-Dec;63(6):363-71 Restriction of duty hour for residents in internal medicine: a question of quality of life but what about education and patient safety?	Restriction of weekly duty hours for residents.	Shorter duty hours have been proposed as a way of improving the health and quality of life of medical residents. However, the authors suspect the change could negatively impact education, as well as patient security and satisfaction with care.
Am J Orthop. 2007 Dec;36(12):E172-9 Resident work-hour rules: a survey of residents' and program directors' opinions and attitudes.	Opinions of residents and program directors about reducing weekly duty hours.	Residents and program directors have different opinions about reducing weekly work hours. However, both agree that quality of life has significantly improved with shorter work hours.
J Gen Intern Med. 2007;22(1):102-6 Internal Medicine Residents Reject "Longer and Gentler" Training	Residents' acceptance of lower work loads and longer training periods	Most residents disagreed with the notion of longer training periods.
Radiol Bras 2007;40(2):99-103 O perfil do médico em formação em radiologia e diagnóstico por imagem	Psychosocial profile of radiology and diagnostic imaging residents	Self-esteem is above average for 39.6 percent of physicians. For 38.7 percent of students, Medicine was chosen because of personal aptitudes or goals. For 50.9 percent of physicians, clients understand and learn the information they convey. And 77.4 percent of physicians are capable of answering patients' questions.
Curr Opin Anesthesiol. 2007 Dec;20(6):580-4 Duty hours restriction and their effect on resident education and academic departments: the American perspective	Effect of duty hours restrictions on resident education	Medical residents experienced improvements in quality of life after duty hours were restricted. However, it is not clear if patient security and quality of professional education improved or not.
Rev Assoc Med Bras 2007;53(2):95-107 Residência médica: contribuições dos médicos residentes ao debate [editorial]	How medical residents see medical residency	Better working conditions for medical residents requires improved legislation on medical residency.
Rev Bras Educ Méd. 2007;31(2):137-46 Síndrome de Burnout em residentes da Universidade Federal de Uberlândia - 2004	Burnout among residents	Among medical residents, 78.4 percent suffered from burnout syndrome. The majority of cases come from Orthopedics, Pain Clinic, Surgery, Pediatrics, Gynecology and Obstetrics. The authors suggest creating burnout prevention programs to help health care professionals avoid the condition. The study underlines the need to continue researching the subject and to develop more complex models to understand burnout syndrome among medical residents.

Clin Orthop Relat Res. 2006 Aug.;449:134-7 Effect of duty hour standards on burnout among orthopaedic surgery residents	Quality of life, burnout and overall health of residents and university faculty.	Burnout rates among residents were proportional to their duty hours.
Am J Obstet Gynecol. 2006;195(5):1450-6 Eighty hour work reform: faculty and resident perceptions	How residents and faculty see the 80 hour work week for medical residents.	Residents and faculty disagree about the impact of the reform on resident education and patient care, but agree that it improves quality of life for residents.
Am Surg. 2008;74(6):542-7 Three-year results of mandated work hour restrictions: attending and resident perspectives and effects in a community hospital	Impact of duty hours restrictions on patient care and resident education	Professors believe shorter duty hours could help resident education and patient care, while residents believe it wouldn't. However, both agree that shorter duty hours mean an improvement for the quality of life of professionals.
Med Princ Pract. 2006;15(4):276-80 Influence of residency training on personal stress and impairment in family life: analysis of related factors	Stress levels among residents and relation between stress and compromises in family life.	Forty two percent of residents consider themselves under major stress, with 21 percent claiming that the stress interferes with their family lives.
Ann Surg. 2006;243(6):864-75 The impact of the 80-hour resident workweek on surgical residents and attending surgeons	The impact of the 80-hour resident workweek on residents.	There are several concerns with the professional education of surgical residents. Though restricting the duty hours of residents has had no measurable impact on the quality of patient care, there have been significant improvements in the quality of life of residents.
BMC Health Serv Res. 2006 Aug 14;6:98 Swiss residents arguments for and against a career in medicine	Swiss residents arguments for and against a career in medicine.	The primary complaint from residents is the structural deterioration of working conditions.
BMC Health Serv Res. 2006 Oct 19;6:136 The use of sleep aids among Emergency Medicine residents: a web based survey	The use of drugs among residents for sleep management or to fight sleepiness	Thirty eight percent of residents were excessively sleepy and 7 percent were very sleepy, while 46 percent regularly used alcohol, antihistamines, sleeping pills, benzodiazepines or myorelaxants.
Interface Comun Saúde Educ 2006;9(18):103-16 Médicos residentes e suas relações com/e no mundo da saúde e da doença: um estudo de caso institucional com residentes em Obstetrícia/Ginecologia	Perceptions of physicians who concluded the Obstetrics/ Gynecology residency about the period.	Authors found feeling of profession losing respect, resentment because of diminishing power of medical knowledge, perception of medicine as more business than profession, uncertainty about double roles (student and professional), difficulties with death and sorrow.
Z Psychosom Med Psychother. 2005;51(2):163-78 Stress at work and well-being in junior residents	Work experiences of first-year medical residents and their impact on residents' physical integrity and psychological well-being.	Female residents have more positive social relations at work and work harder on activities than male residents.
BMC Med Educ. 2005 Jun 22;5:21 Well-being in residency training: a survey examining resident physician satisfaction both within and outside of residency training and mental health in Alberta	Well-being of residents.	Thirty four percent of residents consider their lives stressful, with women suffering more than men.

Acad Med. 2005 Jan;80(1):98-102 Compliance with common program requirements in Brazil: its effects on resident's perceptions about quality of life and the educational environment	Quality of life of residents and education environment, as seen through violations of Programa de Requisitos Comuns (Common Requirements Program).	Violations of the program impact the quality of life of residents and the educational environment.
São Paulo: Universidade de São Paulo, Faculdade de Medicina; 2005 Aquisição de conhecimentos, estratégias de aprendizado, satisfação com o ambiente de ensino e qualidade de vida de médicos residentes de anestesiologia. Estudo longitudinal multicêntrico [tese]	Cognitive performance of residents for differential characteristics in terms of affective and motivational variables and variables related to perceptions of the educational context and quality of life.	Residents with positive affective and motivational profiles acquire knowledge during the first two years of residency, while residents with less positive profiles show no gains.
<i>Arch Venez Psiquiatr Neurol.</i> 2005;51(104):12-5 Estrés Laboral y Mecanismos de Afrontamiento: su relación en la aparición del Síndrome de Burnout en Médicos Residentes del Hospital Militar "Dr. Carlos Arvelo"	Stress, coping mechanisms, and burnout among residents.	Medical residents with nonfunctional coping styles are more susceptible to burnout syndrome.
Rev Fac Ciênc Méd Sorocaba. 2005;7(3):15-9 Rastreamento Epidemiológico da Sintomatologia Depressiva em Residentes e Estudantes de Medicina	Depression among medical students and residents.	Eighty one percent of residents and 72 percent of students show symptoms of depression, especially women. They mostly drink alcohol, smoke, are single and do not live alone.
J Gen Intern Med. 2005 Jul;20(7):559-64 Relationship Between Increased Personal Well-Being and Enhanced Empathy Among Internal Medicine Residents	Relationship between well-being and empathy.	Increased mental well-being is associated with enhanced empathy among residents.
São Paulo: Universidade Federal de São Paulo, Escola Paulista de Medicina; 2004 Avaliação da qualidade de vida em residentes de medicina da UNIFESP-EPM. [tese]	Quality of life of residents	Residents have low quality of life. Education system needs improvement.
Rev Bras Anesthesiol. 2004 set-out;54(5):693-9 O plantão noturno em anestesia reduz a latência ao sono	Fatigue and stress among residents	The 24- or 30-hour shift causes pathological sleep latency values, reflecting extreme fatigue among anesthesiology residents. Regulation of number of hours of rest after shift is key.
São Paulo Med J. 2004;122(4):152-7 Clinical and demographic profile of users of a mental health system for medical residents and other health professionals undergoing training at the Universidade Federal de São Paulo	Clinical and demographic profile of residents who use a mental health system.	Residents were predominantly young, single, female, and requesting help during their first year. Those looking for help spontaneously had higher rates of adherence. Depression and anxiety were the most frequent diagnoses, followed by suicidal thoughts.

<p>Ann Surg. 2003;237(4):449-55 Implementing resident work hour limitations: lessons from the New York state experience</p>	<p>Duty hour limitations for resident work.</p>	<p>Most residents reported improved quality of life. Some reported negative impacts on surgical training and quality and continuity of patient care. Negative perceptions of the impact of duty hour restrictions were prevalent among physicians with more time as residents and residents in academic medical centers than among recent residents and residents working at community hospitals.</p>
<p>Rev Bras Oftalmol 2003;62(11):776-81 Motivações e percepções de médicos residentes em relação à escolha da carreira em Oftalmologia</p>	<p>Motivations and perceptions leading medical residents to choose ophthalmology.</p>	<p>Primary motivational factors were the ability to help people see better, opportunity to perform surgery, work hours, technological innovation, the fact that high risk, life or death situations are rare, and pursuit of higher quality of life for patients and physicians.</p>
<p>Aletheia. 2002 Jan-Jun;(15):93-101 Obligatio faciendi: identificando estressores no contexto do trabalho</p>	<p>Stress factors among residents</p>	<p>Residents leave their support network (family, friends and spouses) due to the high demands for technical and interpersonal skills, as well as the significant amount of time they need to dedicate to their work. They also need to navigate various roles within institutions, roles which often clash with one another.</p>
<p>Rev Hosp Univ 2001;11(1/2):59-63 Os dilemas da formação do médico e os tutores na residência de clínica médica da FMUSP</p>	<p>Difficulties in medical education and the practice of medicine.</p>	<p>The tutoring activities of residents at the FMUSP pain clinic enables residents to develop resources to better handle the obstacles they encounter in the process, thus allowing them to take more advantage and find greater satisfaction in their activities, as well as improved relationships with staff and patients, and improved conditions for better professional and personal choices.</p>
<p>Invest Clín. 2000;41(4):219-35 El concepto de "calidad de vida en los estudiantes de medicina y residentes de postgrado de un hospital universitario</p>	<p>Concept of quality of life.</p>	<p>We need to add knowledge about quality of life to medical education, as well as the practical utility of QOL in professional practice.</p>
<p>Rev Assoc Med Bras. 1998;44(1):28-34 Natureza e magnitude do estresse na Residência Médica</p>	<p>Stress factors in training and the effects of said stress on residents and on quality of patient care.</p>	<p>The magnitude of the stress during Medical Residency comes from the interaction between three kinds of stress: professional, situational, and personal.</p>
<p><i>Psychiatr on Line Braz.</i> 1998;(3):10 <i>Residência Médica: estresse e crescimento</i></p>	<p>Psychological aspects related to medical residency.</p>	<p><i>Though stressful, medical residency provides professional and personal development for physicians.</i></p>
<p>Rev Med Hered 1998;9(2):63-8 Modos de afrontamiento al estrés en residentes de medicina</p>	<p>How residents cope with stress.</p>	<p>Almost half of all residents have problems coping with emotional stress, which has a negative impact on the doctor-patient relationship and on performance, thus proving the need for strategies to help residents cope with stress.</p>

<p>São Paulo Med J. 1997 Nov-Dec;115(6):1570-4 A pioneering experience in Brazil: the creation of a center for assistance and research for medical residents (NAPREME) at the Escola Paulista de Medicina, Federal University of São Paulo</p>	<p>Implementation of an assistance and research center for medical residents.</p>	<p>To improve the overall quality of Universidade Federal de São Paulo's residency program, for both professionals and patients, seeking to decrease stress levels among residents, foster professional and personal development, prevent professional dysfunction and emotional disorders, offer psychological treatment, assess tutors in residency programs, and develop survey programs to better identify risk factors for emotional problems during residency.</p>
<p>CMAJ. 1996 Jun;154(11):1657-65 Resident's experiences of abuse, discrimination and sexual harassment during residency training</p>	<p>Abuse, discrimination and sexual harassment among residents.</p>	<p>The authors come to the conclusion that psychological abuse, discrimination and sexual harassment are common problems among residents, requiring work from multiple professional specialties.</p>
<p>Maracay: Universidad de Carabobo, Facultad de Ciências de la Salud; 1994 Jornada prolongada y fatiga em médicos residentes del gineco-obstetricia: Hospital geral de Maracay, Venezuela, 1994 [dissertação]</p>	<p>Fatigue among gynecology and obstetrics residents with prolonged duty hours.</p>	<p>The authors found female residents ingested less stimulants than male residents, and that the less hours of sleep, the more fatigued residents there were.</p>
<p>Arch Hosp Vargas 1993;35(3/4):135-42 Evaluación de la carga de trabajo quirúrgico de residentes del post-gradado de cirugía general</p>	<p>Duty hour of residents.</p>	<p>Second-year residents had the greatest surgery duty hours. Third-year residents performed fewer surgical procedures and are not performing as many as they should or at the proper complexity levels.</p>
<p><i>J Gen Intern Med.</i> 1986;1(4):252-7 <i>Stress in residency: a challenge to personal growth</i></p>	<p>Relationship between profile of residents, stressful experiences and psychosocial adaptation.</p>	<p>Residency is associated with feelings of depression, anger, cynicism and emotional retraining, but there is no great concern with the possible effects of those feelings on future actions and professional attitude of physicians. Therefore, the author states that residents need more support and personal guidance to become good physicians and that residency programs should offer support to help professionals develop the communication skills they need to become competent professionals.</p>
<p>Acad Med. 1991;66(5):301-3 The relationship between residents' characteristics, their stress experiences, and their psychosocial adjustment at one medical school</p>	<p>Stress among residents</p>	<p>Women reported higher levels of stress than men; however, they did not report high levels of emotional suffering. The time assigned to education by residents was correlated with residents' humor and annoyance levels.</p>
<p>Chicago: American Medical Association; 1979 Beyond survival: the challenge of the impaired student and resident physician</p>	<p>Challenges of medical resident during educational process.</p>	<p>Factors such as student-doctor transition, professional responsibility, social isolation, fatigue, sleep deprivation, overwork, fear of committing mistakes and other factors connected to the residency educational process are associated with psychological, psychopathological and behavioral responses, including depressive states accompanied by suicidal thoughts, excess alcohol consumption, drug addiction, chronic anger and the development of bitter skepticism and gallows humor, turning medical residents into a high risk group for emotional conditions.</p>

from supervisors, society at large and themselves. They also experience dual roles: supervisors expect they will learn like students, with exhaustive work shifts and mandatory assignments, but also act like professionals, which requires increasing levels of responsibility, competence, and efficiency.

Studying burnout syndrome among the medical residents of the Universidade Federal de Uberlândia, Lima et al.<sup>8</sup> found high rates of burnout among residents, a worrisome fact indicating the need for preventive and healing measures. According to the authors, variables such as duration of course, work overload, duty hours, major personal investment, and giving up time for leisure, family, friends and all other activities, as well as the need to complement education with medical residency can all cause residents to burn out.

In reviewing the scientific literature on training as part of medical residency, primarily in particular specialties, we find that professionals suffer high rates of health issues that interfere with quality of life and, consequently, with the quality of care provided to patients.

In the United States, Fahrenkopf et al.<sup>10</sup> studied rates of depression and burnout syndrome among pediatrics residents to assess the relationship between the two conditions and medication errors. Though they found no relation between burnout syndrome and increased rates of medical errors, they did find that these two are the primary conditions afflicting pediatrics residents.

In an epidemiological survey of depressive symptoms among medical students and residents, Gabriel et al.<sup>11</sup> found that medical students have major rates of depression, which can compromise the quality of patient care. The authors also found that female students and residents suffer more than male ones, and that most residents habitually drink alcoholic beverages.

Ríos et al.<sup>12</sup> assessed stress levels among residents and relation between stress and compromises in family life, finding that stress interferes with family relationships and can be harmful to family life.

In the United States, Archer et al.<sup>13</sup> assessed stress factors among residents and their psychosocial adaptations; they found that duty hours and low pay were the primary sources of stress.

Another important problem afflicting residents is excessive sleepiness secondary to long shifts. An American study found that most residents feel sleepy and have trouble sleeping, regularly turning to alcohol or sleeping aids to try and fall asleep<sup>14</sup>.

A study on prolonged duty hours and fatigue among gynecology and obstetrics residents in Venezuela showed that professionals, especially males, ingest stimulants, and that residents in this condition have unacceptably high rates of fatigue. The author stresses the need for work schedules that include periods of rest during 12-hour shifts<sup>15</sup>.

Residents have informal knowledge about quality of life, but it is not actually applied.<sup>16</sup> Macedo<sup>17</sup> found that residents' quality of life in terms of vitality, social life, emotional life, and mental health are comparable to those of patients with chronic conditions. González et al.<sup>16</sup> suggest knowledge about quality of life, as well as its practical usefulness in professional life, should be incorporated into medical education.

Buddeberg-Fischer et al.<sup>18</sup> found the primary complaint among Swiss residents is the structural deterioration of working

conditions, including an imbalance between personal and professional lives. In their study about arguments for and against a career in medicine, residents claim that making medicine an appealing career once more would require making sustainable changes to health and to the social and political scenario.

Studying duty hour restrictions for residents, Whang et al.<sup>19</sup> found that most residents mentioned improved quality of life following duty hour restrictions.

Gopal et al.<sup>20</sup>, however, in surveying residents about acceptance of duty hour restrictions and longer curricula in the United States, found that most disagree with the notion of extending the educational period. Only residents with burnout syndrome or who knew the criteria for the syndrome were flexible in accepting a 60-hour work week in lieu of an 80-hour one.

Shanafelt et al.<sup>21</sup> found that the greater the mental well-being of residents, the more enhanced their empathy. Ratanawongsa et al.<sup>22</sup> found that well-being interferes with patient relations, interactions with peers, performance, and motivation. The Irish residents surveyed by the authors claimed greater well-being favored the decision-making process. The results reaffirm the need for investing in improvements to this professional training system.

According to Ratanawongsa et al.<sup>22</sup>, resident training and patient care would improve with actions focused on the well-being of residents. Cohen and Patten<sup>23</sup>, in a study on the well-being of residents in Alberta, Canada, found that 34 percent of residents consider their lives stressful, with more women afflicted than men. Prolonged pressure was singled out as the primary stress factors by residents, who claim they would not choose a career in medicine if they could start their professional lives over. There was also a strong correlation between intimidation and sexual harassment of female residents.

A study on abuse, discrimination and sexual harassment among Canadian residents shows that 50 percent of residents suffered psychological violence from patients, family members and supervisors, women more often than men; 5.38 percent of residents, all female, claimed to have been victims of sexual discrimination; 40 percent claimed to have suffered sexual harassment of some kind, their most common reactions to it being embarrassment (24%), anger (23.8%), and frustration (20.8%). The data show that psychological violence, discrimination and sexual harassment are common problems among residents, requiring work from multiple professional specialties<sup>24</sup>.

Buddeberg-Fischer et al.<sup>25</sup> surveyed the work experiences of first-year medical residents and their impact on their physical integrity and psychological well-being. They found that women receive less guidance than men during residency, but have more positive social relations and work harder on activities than their male peers. The absence of supervisors, undefined hierarchies, stress and excess responsibilities were mentioned as risk factors for symptoms of anxiety and depression.

Barack et al.<sup>26</sup> surveyed orthopedic surgery residents and university faculty to measure quality of life, burnout syndrome, and overall health. Students had high rates of burnout and emotional exhaustion. The authors found that shorter duty hours lead to higher quality of life, decreasing burnout rates among residents.

Belgium restricted the work week to 48 hours for residents in



1999, a measure still being debated in Europe. The United States recently restricted the work week to 80 hours for residents<sup>(27)</sup>. Several studies have been performed in the United States to assess the impact of duty hour restrictions on professional training and patient care<sup>(27-31)</sup>.

In the United States, Dola et al.<sup>(32)</sup> surveyed resident and faculty opinions about duty hour restrictions for residents. They found that 45.3 percent of residents believe restricting duty hours improves the quality of patient care, while only 8.8 percent of professors share that notion. However, both agree that the reform improved the quality of life of residents.

In Brazil, though the law (Decreto 80.281/1977) already restricts the work week to 60 hours, with 80 to percent assigned to service and the rest to classroom and complementary work, several studies find major health issues secondary to prolonged duty hours, including burnout syndrome, depression, fatigue, stress, and anxiety<sup>(8,15,33-37)</sup>. The results tell us the service and resident training should be reformed to improve the quality of life of residents, thus improving the quality of patient care in Brazilian health care facilities.

In 1981, the National Medical Residency Committee created Programa de Requisitos Comuns (Common Requirements Program) to regulate the work hours of medical residents.

Oliveira Filho et al.<sup>(38)</sup> found that violations of the common requirements program are associated with poorer perception of key aspects of overall quality of life, residency quality of life, and worsened educational environments.

Residents have a lot of trouble coping with stress and poor working conditions. Studies about coping strategies have shown that almost half of all residents have problems coping with emotional stress, which has a negative impact on the doctor-patient relationship and on performance, thus proving the need for strategies to help residents cope with stress.<sup>(33,34)</sup> Blandin et al.<sup>(33)</sup> stress that medical residents with dysfunctional coping strategies are more susceptible to burnout syndrome.

Studies have shown that implementing resident assistance programs leads to improvements in professional education, in terms of managing the stress caused by the educational process, and personal quality of life, improving relationships with patients<sup>(34,35,37,39,40)</sup>.

Oliveira Filho<sup>(40)</sup> assessed the acquisition of knowledge, learning strategies, satisfaction with learning environment, and quality of life of anesthesiology residents. He finds that residents with positive affective and motivational profiles show significant gains in knowledge during the first two years of residency.

In assessing the quality of life of residents at the São Paulo School of Medicine, part of Universidade Federal de São Paulo (UNIFESP-EPM), Macedo<sup>(17)</sup> found second-year residents had better quality of life than first-year residents, especially in terms of social aspects, vitality and mental health, but poorer quality of life in terms of emotional aspects. The author also found that 32 percent of residents were unhappy with the residency and 83.6 percent thought they did not have enough leisure time; female residents performed better than males in terms of vitality, emotional aspects and mental health, while residents happy who were with residency and who though they had enough leisure time had better quality of life in all aspects.

According to Massuda et al.<sup>(41)</sup>, fighting for better work and

learning conditions for medical residents requires improvements to the legislation regulating medical residency, as well as, above all, its enforcement. Also, regulatory bodies urgently need empowerment and the involvement of all stakeholders.

Though stressful, medical residency is an enriching experience, providing professional and personal development for young physicians.<sup>(42)</sup> However, Residency is associated with feelings of depression, anger, cynicism and emotional retraining, but there is no great concern with the possible effects of those feelings on future actions and professional attitude of physicians. Therefore, residents need more support and personal guidance to become good physicians and residency programs should offer support to help professionals develop the communication skills they need to become competent professionals.<sup>(43)</sup>

## CONCLUSION

In reviewing the literature on the quality of life of medical residents, we found high rates of health issues that interfere with the quality of life of medical residents and, consequently, with the quality of care provided to patients.

Though stressful, often with improper arrangements for professional training, which compromises the quality of life of medical residents, medical residency is an enriching experience, providing professional and personal development for recent graduates from medical schools.

The review found that Brazil needs to change the legal regulatory standards for medical residency, as well as that resident assistance programs should be implemented to improve work and learning conditions, which in turn would aid the development of professional skills and improve personal quality of life for medical residents.

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