

PROFILE OF THE PHYSICIAN UNDERGOING EDUCATION IN RADIOLOGY AND DIAGNOSTIC IMAGING*

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Abstract **OBJECTIVE:** To identify differences in the psychosocial profile of medical trainees and residents in radiology and diagnostic imaging, to evaluate the professional aspirations and inner motivation driving their choice of the specialty of radiology and diagnostic imaging, as well as whether their professional satisfaction level improves the doctor-patient relationship. **MATERIALS AND METHODS:** A 26-question questionnaire including the Rosenberg's self-esteem scale was completed by medical trainees and residents. **RESULTS:** Self-esteem is above average for 39.6% of the respondents; aptitude for medicine or personal realization has motivated the choice of 38.7% of the students; for 50.9% of the respondents, the patients understand and assimilate the information received from doctors; 77.4% of the doctors are able to clarify the patients doubts. **CONCLUSION:** In terms of psychosocial profile, there is no difference between medical trainees and residents in radiology and diagnostic imaging. Professional aspirations and inner motivation have played equivalent roles in the specialty choice of medical trainees and residents. Medical residents are better prepared to succeed in a doctor-patient relationship than trainees.

Keywords: Medical residency; Motivation; Profile; Doctor-patient relationship.

Resumo *O perfil do médico em formação em radiologia e diagnóstico por imagem.*

OBJETIVO: Identificar diferenças no perfil psicossocial do especializando e médico residente em radiologia e diagnóstico por imagem, avaliar a aspiração profissional e as motivações internas que os influenciaram a escolher a especialidade radiologia e diagnóstico por imagem e se o nível de satisfação profissional melhora a relação médico-paciente. **MATERIAIS E MÉTODOS:** Foi aplicado um questionário com 26 perguntas que constava também do teste de auto-estima de Rosenberg. **RESULTADOS:** A auto-estima está acima da média para 39,6% dos médicos. Para 38,7% dos alunos, a escolha da medicina se deu por aptidão ou realizações pessoais. Para 50,9% dos médicos entrevistados, os clientes compreendem e assimilam as informações transmitidas. Apresentam condições para esclarecer as dúvidas dos pacientes 77,4% dos médicos. **CONCLUSÃO:** Não há diferença no perfil psicossocial do especializando e do médico residente em radiologia e diagnóstico por imagem. A aspiração profissional e as motivações internas dos médicos residentes e especializando têm as mesmas influências na escolha da especialidade. Os médicos residentes estão mais preparados para o envolvimento na relação médico-paciente do que os especializando.

Unitermos: Residência médica; Motivação; Perfil; Relação médico-paciente.

INTRODUCTION

Medicine is a mix of science and art. As a science, medicine implies learning and much study, with permanent updating. As an art, it demands a daily bedside experience to discern relevant data from a tangle

of complaints, signs and symptoms, allowing the diagnosis of a determined pathological condition.

It is known that social variables and inner motivation affect both the profession choice and the medicine practice. The relationship of the physician with the practice of his/her profession plays an essential role in the understanding of his/her choice. For Glasser⁽¹⁾, the work is a component that defines our lives; we cannot be victims of our choices, we must take over the responsibility for them.

The medical residency is recognized as a modality of post-graduation, and considered as the ideal course for education of specialists. In 1889, at the John's Hopkins Hospital, the first residency programs coordinated by Halsted and Osler were implemented respectively in the areas of surgery

and clinical practice. In 1945, the first program of medical residency in orthopedics was implemented in the Universidade de São Paulo Clinics Hospital, São Paulo, SP, Brazil. In the Instituto de Previdência e Assistência ao Servidor do Estado do Rio de Janeiro (Institute of Social Security and Assistance to the Civil Servants of Rio de Janeiro State), in 1948, residency programs were created in the areas of general surgery, medical clinical practice, pediatrics, and gynecology & obstetrics⁽²⁾.

Later in the sixties/early in the seventies the number of these programs presented a significant increase because of the rapid expansion of medical schools. However, several training programs offered to the students graduated from these schools did not present the required quality for education of specialists.

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Presently, after finishing their course, medicine graduates try to enroll in medical residency programs in the areas they intend to specialize, but not always they succeed due to the strong competition. Some of them are approved and start their training; other enroll in specialization courses, and part of them search for training in the specialty chosen. Another group is absorbed by the labor market right after graduating.

According to Decree no. 80.281/77, the medical residency is a post-graduation course for physicians, characterized by a working training of the resident physician, whose activities are supervised on a full-time basis by technically and ethically qualified and experienced medical professionals⁽³⁾.

Since 1977, all the medical residency programs in Brazil are under the competence of Comissão Nacional de Residência Médica (CNRM), which has established standards and criteria for accreditation of programs in medicine clinical practice, general surgery, gynecology & obstetrics, and pediatrics. Subsequently, the requirements for accreditation of other specialties were defined.

According to the CNRM, for programs of medical residency in radiology and diagnostic imaging accreditation, the required training duration is three years, in the areas of general and contrast-enhanced radiology, ultrasonography, computed tomography, mammography, bone densitometry, magnetic resonance imaging, interventional radiology, examination techniques, urgencies and emergencies. The working training must correspond to 80% or 90% of the yearly workload, and theoretical activities must include the following modalities: anatomic-clinical sessions, study of scientific papers, courses, lectures and seminars, bioethics, medical ethics, scientific methodology, among others. The institution also may offer training programs in the following areas: angioradiology & endovascular surgery, echocardiography with Doppler, neuroradiology, interventional radiology and angioradiology⁽⁴⁾.

Specialization courses are regulated by the Resolution no. 01/01 of the National Council of Education⁽⁵⁾, establishing a minimum 360-hour workload, a minimum 75%-frequency in scheduled activities, and

a teaching staff constituted of at least 50% of members holding a master degree or PhD obtained in programs recognized by Capes (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior). For final approval of the student, the presentation of a graduating paper or monography is required. Upon the end of this course, the student will be entitled to receive a graduating certificate recognized by several medical specialties societies as a prerequisite for granting of a specialist title. This course modality has been utilized by certain institutions as a replacement for programs of medical residence, considering that there is neither a term for conclusion of the course nor a maximum workload. On the other hand, there is no need to comply with the previously mentioned requirements established in Law no. 6932/81, concerning residents' rights⁽⁶⁾.

According Sousa & Koch⁽⁷⁾, the following requirements must be met for a program of medical residency to be accredited: an appropriate infrastructure aiming at assisting patients, an adequate services dynamics to ensure that the necessary basic procedures are performed; and a well prepared pedagogical program to achieve the goals proposed during the training period.

According to Sousa & Koch⁽⁸⁾,

“Considering the constant scientific developments and the presently demanding world of labor, the assurance of the success of the future specialist in Radiology and Diagnostic Imaging, besides the education traditionally offered by Medical Residency programs, depends on the acquisition of new competencies and specific skills which constitute the profile of an ideal Resident physician, whose main characteristics are the following:

- He/she must consider that mistakes are a natural part of the natural learning process, and should understand that his/her attitude recognizing and trying to learn with them will distinguish him/her from others who harm patients for concealing their mistakes for embarrassment.
- From the best Resident physicians, those who are destined to be leaders in their profession, it is expected that they are willing to help their peers, considering them much less as competitors than as assistants, and to whom they are an example of

compliance with working hours, performing their duties with strictness and competence, and remaining in service until they are finished.

- Besides the expectation of a brilliant technical level, some ethical and human qualities must be part of the ideal Resident physician's character: honesty, commitment to keeping the confidentiality of information obtained from patients, generosity with his/her peers, trying to be always open to interact with other health professionals and the public in general.

- The resident must understand that the main goal of the training is to offer a quality assistance to the patient. He/she also must know that the health care requires services in compliance with quality standards, respecting the precepts of Bioethics and Medical Ethics, considering that the resident's responsibility is not limited to the technical act, but includes the resolution of the detected problem.

- The resident must be skilled at developing both verbal and non-verbal communication, besides being skilled at writing and reading interpretation.

Aiming at ensuring a constant update in the Resident's education, allowing his/her effective participation in the health services rendering, it is necessary that the Education in Radiology and Diagnostic Imaging is periodically reviewed.”

It is important to evaluate the differences in the psychosocial maturity of trainees and resident physicians in radiology and diagnostic imaging to understand their expectations regarding their future, wages, motivation for choosing medicine, specifically in this specialty, difficulties and facilities faced in the professional practice, idealization versus reality of the profession, and personal aspirations as radiologists.

According to Taha et al.⁽⁹⁾, the option for radiology and diagnostic Imaging has increased as a result of the development of imaging methods. This can be observed through a higher search for courses of specialization and programs of medical residency in this specialty.

According to Nogueira⁽¹⁰⁾, some papers approaching medical residency have already been published on several emotional aspects of the resident physicians, their working training, stress, their education

itself, anxiety, increase in sleep, appetite, anguish, irritability, among others.

The norms in force concerning education of specialists in radiology and diagnostic imaging emphasize the technical competence with a little approach to behavioral aspects. Therefore, the trainees self-esteem may be evaluated by means of the Rosenberg's scale⁽¹¹⁾, a ten-item test for a self-analysis based on the respondent positive or negative attitude (Cronbach's alpha = 0.6 and intraclass correlation coefficient = 0.81). It may be applied to adults and adolescents with highly consistent results.

The present study is intended for contributing to the understanding and knowledge of the profile of the physician educating in radiology and diagnostic imaging in a bio-socio-cultural context, aiming at better understanding the reasons leading these professionals to choose this specialty.

MATERIALS AND METHODS

A questionnaire was created with 26 questions regarding psychosocial profile, social factors and inner motivations influencing the choice of the specialty, professional needs and possibilities of adaptation to the market demands, besides level of professional satisfaction. Two questions were answered by means of a numeric scale (1 – low; 2 – middle; 3 – high). The participation of trainees and medical residents in this study has occurred on a voluntary basis. All of them have signed a term of informed and free consent.

The mentioned questionnaire was applied in the period between February and September 2005, to 44 trainees of the post-graduation course at Cesanta and PUC, six resident physicians in radiology and diagnostic imaging at Santa Casa de Misericórdia do Rio de Janeiro, and six resident physicians in radiology and diagnostic imaging at Hospital Universitário Clementino Fraga Filho – Universidade Federal do Rio de Janeiro (HUCFF-UFRJ). Also, the Rosenberg's self-esteem test was applied as a part of the mentioned questionnaire.

RESULTS

Of 56 students interviewed, 85.2% were in the age range between 21 and 30 years.

Thirty-one (53.7%) of the respondents were women.

Self-esteem – Some of the students (21.3%) presented anxiety, 52% of them at home, 19.2% during classes, and 28.8% during practical activities.

An above average self-esteem was observed in 39.6% of the physicians who achieved 30 points in the Rosenberg's self-esteem scale. Of the students interviewed, 32.1% presented a higher average self-esteem, i.e. 35 points in the mentioned scale. Only 17.0% of the students demonstrated a high self-esteem, with 40 points in the scale, and 11.3% did not answer this question.

Motivation – For 37.7% of the students, the choice of medicine was motivated by aptitude or personal realization; 8.2% did not know the reason of their choice, and 54.1% mentioned an array of motivations.

The reasons leading them to specialize in radiology and diagnostic imaging vary. For 42.6% the reason was affinity with the specialty, and for 53% several reasons were mentioned; 4.4% of the students did not answer this question.

About the level of satisfaction with their professional choice, 30.2% marked level 8, and 30.2%, level 10. The remaining 39.6% marked levels 5, 6 and 7.

Keeping calm, is the way like 64.8% of these students react to difficult situations in their professional practice. The other 35.2% react irritating themselves and swearing.

As regards teachers' expectations, technical knowledge/professional experience/correct diagnosing/commitment were marked at level 3 in the scale by 80.6% of the students. Charisma was indicated by 48.6% at level 2. Good relationship with patients/availability/attention/objectivity were items marked by 90.9% of the respondents, at level 3, and ethics, at the same level by 88.6%.

Professional aspiration – Similarly to the item "motivation", for 37.7% of the students, the choice of Medicine occurred by aptitude or personal realization; 8.2% do not know the reason for the choice, and 54.1% reported an array of reasons.

The motivation for specializing in radiology and diagnostic imaging varies. For

42.6%, the reason was affinity with the specialty. For 53% of the students, several reasons were indicated, and 4.4% did not answer this question.

For 21.7% of the students, the low compensation is the greatest difficulty for the profession. For the other 78.3%, the greatest problem is related with stress, high responsibility, excessive workload, absence of resources, among others.

For 31.9% of the respondents, the greatest facility for the profession is employment opportunity. They said that, despite the low compensation, there is no lack of work. The remaining 61.1% gave different answers, with less than 4% for each of them.

Students questioned about teachers' expectations in relation to their performance answered the following: technical knowledge, professional experience, correct diagnosing and commitment at level 3 for 80.6% of respondents; charisma, at level 2 for 48.6%; good relationship with patients, availability, attention and objectivity, at level 3 for 90.9%; and ethics, at level 3 for 88.6% of the respondents.

As regards their time out, 20.2% of the students spend it in leisure with their families/staying home/seeing someone; the other 78.8%, riding a bicycle, listening music, going to the movies, to the beach, watching TV, reading, browsing in the internet, among others.

The salary expectation for 54.5% was in the range between R\$ 8,000.00 and R\$ 10,000.00 at the fifth year of professional practice. The other 45.5% are distributed among salary expectations ranging between R\$ 3,000.00 and R\$ 15,000.00.

Doctor-patient relationship – Likewise as regards professional aspiration, this question was aimed at measuring the teachers' expectations in relation to the students' performance. For 80.6% of the respondents, level 3 was marked for technical knowledge/professional experience/correct diagnosing/commitment. Charisma was given level 2 by 48.6% of the physicians. Good relationship with patients/availability/attention/objectivity were given level 3 by 90.9% of the respondents. Ethics was marked by 88.6% at level 3.

For 62.5% of the students, the patients ask few questions about their diseases, and for 28.6%, the patients ask many questions

about their diseases. Only 8.9% answered that patients ask no question about their diseases. For 50.9% of the physicians, the clients understand and assimilate the information given by them, and 49.1% say that they do not.

Of the respondents, 77.4% declared to be able to clarify the doubts of their patients, and the other 22.6% said they do not feel comfortable doing so.

As regards the goals to be achieved by the physicians in this specialty, level 3 was chosen at highest rates in all the answers, with the following distribution: a good financial compensation, 67.6%; to acquire practical experience in this area, to learn examination techniques, update and improvement in radiology and diagnostic imaging for 100% of the students; learning to deal with patients, to transmit confidence and be always available for 77.1%; professional realization for 88.6% of the respondents.

DISCUSSION

Technological and scientific developments in the area of radiology and diagnostic imaging allow the professional qualifying by the acquisition of new competencies and skills during the medical residency and specialization courses, according to the students' expectations provided they are given opportunities. Therefore, there is a need of a well prepared program to provide physicians with an education appropriate for the future practice of the specialty.

As regards the question about emotional factors afflicting physicians, 21.3% reported anxiety, and 52.2% alternated sadness, anguish and irritability. These symptoms occur in their majority at home, after, during classes, and finally during practical activities. The reason for 26.5% of respondents not answering this question is still to be known. Jaeger⁽¹²⁾ says that medicine present more and more surprising developments and specialization thus placing the physician at risk of setting themselves apart of human values. This situation may induce conflicts associated with the professional practice and the relationship with the multidisciplinary team, resulting in difficulty of communication, frustration and disillusion with the chosen specialty.

Rogers⁽¹³⁻¹⁵⁾ highlights the importance of sensitization, affection and motivation in the construction of the knowledge. The emotional background also is extremely important in this context. This becomes clear from the analysis of the Rosenberg's self-esteem test, since 38.2% of the physicians achieve 30 points in the scale, demonstrating a good level of self-esteem associated with their own positive or negative attitude.

One can observe that a great part of the students feel secure about their professional choice. This choice is predominantly based on aptitude and personal realization. For some physicians, varied motivations were equally marked at low rates. On the other hand, the reason which has led them to specialize in radiology and diagnostic imaging is quite variable. For a great part of the respondents the reason was affinity with the specialization. For another part of the students, varied reasons were marked at extremely low rates. Also few students did not answer this question.

When asked about difficulties in the medicine practice, low compensation is the most mentioned item. On the other hand, employment opportunity was considered as the greatest facility. This uneasiness has been observed by Pereira⁽¹⁶⁾, since many Medicine graduates have sought post-graduation courses in the expectation of increasing their income as a private doctor and also as a provider of health care for private payers (health care plans), including the Brazilian unique health system (SUS – Sistema Único de Saúde).

The present study may bring a great contribution for teachers and advisers in post-graduation programs in radiology and diagnostic imaging to a deeper understanding and knowledge of trainees and resident physicians' profile, their inner motivations, personal aspirations, doctor-patient relationship, besides the way they see their profession.

CONCLUSION

With the present study, we could observe that the choice of the specialization courses or medical residency programs offered by Cesanta, PUC, Santa Casa da Misericórdia do Rio de Janeiro, and by

HUCFF-UFRJ is due to excellent references obtained by candidates on their courses and professors, with a great influence on their motivation.

These students have chosen medicine by aptitude and personal realization as their inner motivations.

The students' satisfaction levels related to their professional choice achieved grades 8 and 10, demonstrating that they feel satisfied with their option.

Social factor influencing the choice of this specialty were: affinity between students and the methods of diagnostic imaging, and little personal contact with patients, i.e., little doctor-patient relationship.

Another aspect observed is that, due to the low age and marital status of the majority of students, many of them can not admit the lack of free time for themselves resulting in anxiety and uneasiness, despite their above-average self-esteem. Resident physicians demonstrated a higher assurance level in relation to their professional choice, and naturally behave with less anxiety. On the other hand, trainees demonstrate more immaturity and many times insecure in relation to their professional choice. But, professional ethics is extremely important both for trainees and resident physicians who demonstrate their concern with following the rules of Conselho Regional de Medicina (Regional Council of Medicine).

The maturity observed in the psychosocial profile of trainees and resident physicians in radiology and diagnostic imaging influences the choice of their subspecialization. In the present study, however, the higher determination of residents in relation to their choice has remained unclear.

Medical residents have said that the value of the scholarship is very low, considering not only the heavy responsibility load, but also their expectation as regards their income with some years of professional practice. They have recognized that being a physician represents a privilege in terms of employment opportunities, notwithstanding the highly demanding market and the competition.

It can be observed that the students' desire and willing to adapt themselves to the market demands are not compatible with the expectation of the ideal versus real in the profession. But, during the inter-

views, it was possible to observe that these physicians are open to changes they have to undergo in their long professional career.

Many questions raised in this study could be further explored aiming at the benefit of those who will be treated by these professionals, as well as the satisfaction of the students who will continue facing facilities and difficulties during their whole professional lives.

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