

# Monitoring Employers of the Degree in Human and Rehabilitation Acupuncture in the Labor Market

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**Keywords**— *Rehabilitation, therapeutic clinical medical model, Digitopuncture, Auriculotherapy, Herbalist.*

**Abstract**— *Acupuncture is a therapeutic clinical medical model, a branch of Traditional Chinese Medicine, in which filiform metal needles are used on the surface of the body to balance, prevent, recover and rehabilitate the individual according to NOM - 017 - SSA3 - 2012. In recent years, in addition to unemployment, a series of distortions have appeared in the labor market for professionals. This work seeks to contribute to the analysis of said market using data from a survey of graduates and employers of said graduates, from a state public university in Mexico. From them, an indicator of relevance in the labor market is designed. The results show that a significant proportion of professionals work in inadequate conditions and that there is great heterogeneity in terms of the situation of said market .* **OBJECTIVE:** *To advance in the study of this dimension of relevance by analyzing the labor market for professionals through the integration of a series of characteristics, which in the previously reviewed studies were reflected separately, so that a more complete knowledge of how professionals are inserted into said market and the opinion of their employers, using data from a survey of graduates and employers.* **METHODOLOGY.** *Job placement surveys: carried out within the second and fifth year after graduation, designed to characterize the process of job placement, completion of studies and institutional satisfaction.* **RESULTS** *A survey was conducted of 15 employers of graduates of the Human and Rehabilitative Acupuncture degree, from the centers that have been hiring LAHR graduates for 10 years, while the response recently refers to a hiring period of less than one year. Our surveyed employers take 95% of academic preparation as a fundamental part of hiring a LAHR graduate. Employers need graduates to have theoretical and practical knowledge of traditional Chinese medicine, followed by knowledge of physical means focused on rehabilitation. Conclusions: According to the respondents, we observed the great need to have an agenda for the graduate clinics, to have a greater number of samples and standardize the suggestions.*

## I. INTRODUCTION

Acupuncture is a therapeutic clinical medical model, a branch of Traditional Chinese Medicine, in which filiform metallic needles are used on the surface of the body to balance, prevent, recover and rehabilitate the individual according to NOM - 017 - SSA3 - 2012. Whose Its main advantage is that it is a comprehensive, economical, safe therapeutic method, almost free of side effects and effective in many pathologies, with a great analgesic, anti-inflammatory, tranquilizing, stimulating effect on the immune system and regulating homeostasis in general. It does not carry any risk, if the professional takes care of the proper asepsis and antisepsis, as well as mastery of anatomy, it is very noble, since the body is only stimulated to balance itself and recover health. Therefore, the advantages of incorporating it into the National Health System are many, since: 1. It is an important contribution of therapy and the professionals who practice it, to support health coverage in Mexico. 2. Approaches the patient in a comprehensive manner with a biopsychosocial approach as recommended by the World Health Organization (WHO). 3. It is very low cost and no special facilities are required. 4. In many diseases it is the first-choice therapy due to its great effectiveness.

In recent years, in addition to unemployment, a series of distortions have appeared in the labor market for professionals. This work seeks to contribute to the analysis of said market using data from a survey of graduates and employers of said graduates, from a state public university in Mexico. From them, an indicator of relevance in the labor market is designed. The results show that a significant proportion of professionals work in inadequate conditions and that there is great heterogeneity in terms of the situation of said market.

## II. BACKGROUND

**Acupuncture** was born in the East, being recognized that in China between the years 2696 to 2598 BC, that is, almost 5,000 years ago. This ancient science that has been perfected for thousands of years, and millions of patients treated, is part of traditional Chinese medicine (which has as principles of care based on Acupuncture, Proper nutrition, Digitopuncture, Auriculotherapy and Microsystems, Herbalist, Moxibustion, Qi Gong, Tui- Na massage, Tai Chi Chuan, and the use of suction cups).

Around the 6th century, Chinese acupuncture teaching reaches Korea. In the year 562, he arrives in Japan, and in the year 701, the Japan Academy of Medicine incorporates the teaching of Chinese Acupuncture as a specialty. It is until the 17th century when Chinese acupuncture reaches Europe through the Jesuits, with further development in

the 19th century in France, its introduction being officially recognized in America by Argentina in 1948, and in Mexico since 1962. In 1979 the World Health Organization (WHO), recognized acupuncture as an effective therapeutic method, recommending studies in this regard. The WHO has also published documents and guidelines to encourage clinical studies of this medical discipline as a way to validate acupuncture and formalize its therapeutic and disease prevention use. It is estimated that in Asia alone there are more than 50,000 practitioners. In Belgium, it is documented that 74% of the population is treated with acupuncture by Doctors with Allopathic training. In Germany there are 77% of pain clinics that use it. In the UK 46% of Doctors use it. In the United States there are more than 12,000 licensed professionals, and it is used legally in 38 states. The Mexican government on May 7, 2002 also enacted legislation where acupuncture is recognized as a valid and effective option for medical care and currently, it is applied by more than 11,000 practitioners, with approximately 5,000 doctors, and with a medical certificate. Specialist by the DGP even less than 500 Doctors. However, it is not until September 18, 2012, that the Official Mexican NORMA NOM-017-SSA3-2012, for the Regulation of health services, is published in the Official Gazette of the federation, in which the practice is standardized. of human acupuncture and related methods.

Acupuncture therapy implies a reduction in drug intake for the patient, as well as help to reduce pain in surgical procedures or inflammatory processes.

It is in the sixties of the last century when the expansion of education was generalized worldwide. The characteristic in recent years was the acceleration of its growth, because according to data from the World Conference on Higher Education of UNESCO, held in Paris in July 2009, the world enrollment in higher education increased by 53% in the last decade, which implies 51 million more students since the year 2000. Such a phenomenon has also occurred in Mexico, with an increase in undergraduate enrollment 38.94% in the period from 2000 to 2008, according to data from the Ministry of Public Education.

In contrast, the growth rates of the world and national economy have been relatively low, with the consequent inability of the labor market to absorb the people who year after year demand to enter it, including graduates of higher education institutions. In addition to the phenomenon of unemployment, a series of distortions have appeared in the labor market for professionals, such as: the occupation of positions that do not require university studies (on education); the low coincidence of the knowledge and skills acquired in higher education institutions and the

functions performed (knowledge gap) and the corresponding low salary levels.

In Mexico there are several precedents that yield results that describe the intensity of this problem. A first study, carried out by the National Association of Universities and Institutions of Higher Education (ANUIES), on the labor market of professionals in the decade of 1990-2000, unburdened that about 66.66% of Mexican professionals are employed in positions suitable according to the profession they study, which are likely to apply the knowledge and skills acquired in higher education institutions and that the other group could be occupying positions that do not require higher education (ANUIES, 2003).

In our country, a balance was made on that educational level, reviewing various studies of graduates from various higher education institutions: that of UNAM, carried out in the 2003-2004 cycle, according to which 81.6% had employment, of which 9 % carried out activities not related to their profession; that of the Autonomous Metropolitan University (UAM), of 2005, in which it was found that 74.5% had a job, of which 8.6% carried out activities not related to their profession; and that of the Autonomous University of the State of Hidalgo (UAEH), in 2005, according to which 71% of graduates looked for a job when they finished their degree, of which 78% found it in less than two years, 8% found it he did between one and two years and the rest did not find work (Rubio Oca, 2006).

In relation to the document "Higher Education: current situation and perspectives" prepared by the Undersecretary of Higher Education in 2009, the average salary level reached by professionals was 7,500 pesos per month; 55 out of every 100 graduates of higher education institutions (HEIs) work in areas other than the one they studied and there are 16 critical careers with excess supply of graduates, which means that they have low-paid jobs and difficulties in obtaining positions in those areas. On the other hand, according to journalistic reports, the undersecretary of Higher Education in turn, when participating in the "Forum: towards a collaborative agenda between companies and HEIs", held in 2009, stated that: at least 45% of the almost 8 million professionals carry out tasks other than their training; 40% earn less than 4 minimum wages and most of them work without benefits or contract (Notimex, 2009-09-05).

The above information, contained in this paper, constitutes an alarming situation in relation to the labor market for professionals in the country, to the extent that ANUIES, in its most recent higher education planning document, establishes as one of its strategic objectives to achieve the

relevance of careers, since such a concept covers several areas, as well as the adequate insertion of university graduates in the labor market.

#### APPROACH AND DEFINITION OF THE PROBLEM

Therefore, the analysis of the labor market and the profile of the graduate of the Degree in Human and Rehabilitative Acupuncture as a professional trained to provide care in the health area is of vital importance. I will try in this paper to answer two fundamental questions for the purposes of this analysis.

. Why is the professionalization of acupuncture practice important? And what is the expectation of the Bachelor of Human and Rehabilitative Acupuncture when facing the Mexican labor market?

#### OBJECTIVES

The objective of this paper is to advance in the study of this dimension of relevance by analyzing the labor market for professionals through the integration of a series of characteristics, which in the previously reviewed studies were reflected separately, in such a way that it is possible to have a more complete knowledge of how professionals enter this market and the opinion of their employers, using data from a survey of graduates and employers. From them, an indicator of relevance in the professional labor market is designed, built with six variables that characterize the market with greater objectivity, which allows ordering the various university careers according to their forms of integration into the labor market by part of their respective graduates.

#### JUSTIFICATION

Over the years, various approaches have been developed that analyze education at the highest levels of training. As it is, the *theory of human capital* which affirms that education is an act of investment rather than a consumption expense, so that the accumulated knowledge, added to certain components, represents the main asset that a person possesses.

For his part, Becker (1993) defines human capital as the set of productive capacities that an individual acquires by accumulating general or specific knowledge. The basic premises of this approach indicate that as a person has a greater number of years of schooling, their productivity will also be higher, a situation that will be reflected with better jobs and higher remunerations, since income is equal to their marginal productivity. . This theory considers that markets are fully efficient and pay each worker the value of their marginal product, regardless of the work done. Therefore, it supposes an optimizing behavior on the part of companies by taking full advantage of the knowledge and skills of their employees. In this situation, all

employees occupy positions and perform functions according to their educational level, thus ruling out the presence of over-education, a situation that is attributed to those who have higher education than is necessary for the job they hold, particularly in the case of professionals.

Additionally, in order to complement the above, I will point out the neoclassical theory, within which the theory of human capital is circumscribed, which establishes that under competitive labor market conditions, both the supply and the demand for labor, acting freely, they will determine the equilibrium level of employment and wages. This implies the absence of unemployment of professionals, and in general of any person who would be willing to work at those salary levels determined by the market and that would be equal to the marginal productivity of work, determined in this case mainly by the levels of training acquired.

Over time, many of the postulates of the theory of human capital were called into question and theoretical alternatives arose based on the fact that the labor market was not capable of providing employment to the large number of graduates of higher education and that they had to accept jobs of a lower category than expected and therefore with lower income.

From these criticisms, alternative hypotheses arise, such as the theory of competition for jobs, the assignment theory and the theory of heterogeneous knowledge, whose main arguments focus on the dynamics by which investment in human capital is remunerated.

The theory of competition for positions proposed by Lester C. Thurow postulates that employers are based on observable characteristics of people to hire them, education being the most common, as it provides better information on the performance of individuals. Thus, it indicates that the most productive people will be hired and that they require less investment in training or specialized training for the job (González Betancor, 2003).

Since it is not known with certainty how much additional training a worker will need to perform in the position, employers will hire those who, according to their expectations, are better prepared, education being the main signal for this. And if they find that the most educated require less training, then they will hire them regardless of whether the position requires a lower level of schooling.

As an alternative to the aforementioned approaches, the assignment theory has recently emerged, whose main exponent is Michael Sattinger (1993), and the heterogeneous knowledge theory of Jim Allen and Rolf Van Der Velden (2001), both share the idea of that remuneration is determined both by the educational level of the individual and by the characteristics of the job

(according to their educational requirements and skills). The difference between the two theories lies in the relationship they observe between overeducation (education gap) and the underuse of knowledge and skills (knowledge gap), with the theory of heterogeneous knowledge making a clear distinction between the two concepts (Di Pietro and Urwin, 2002).

In allocation theory both the education gap and the knowledge gap are considered on a par. This problem that arises when the knowledge and skills learned by an individual in his years of study do not fit with those required to perform the job for which he was hired; Therefore, it would be expected that workers whose level of education is higher than that required by their position, do not make the most of their abilities and are less productive than their peers in jobs appropriate to their schooling.

Meanwhile, the theory of heterogeneous knowledge indicates that the relationship between schooling and the gap in knowledge is not as strong. The central reasoning is that people with the same level of education have a diverse range of abilities and those who are in the lower range for their formal education can be on a par with those with a lower educational level. So, such people would be over-educated in relation to the years of formal education completed, however, they could be considered appropriately educated for the job in terms of skills and abilities, since they are less capable or have less marketable skills (Di Pietro and Urwin, 2002).

#### KIND OF INVESTIGATION

Data collection was obtained through a qualitative, descriptive, cross-sectional, survey-type study as a measurement instrument. The results obtained indicate that the graduates are developing their work in their area of competence and their career profile, also mentioning some of its strengths and areas for improvement.

### III. METHODOLOGY

There are several methodologies to carry out a study of graduates that propose the different dimensions and categories that serve as a guide for their development. According to [ANUIES \(2003\)](#) Higher Education Institutions must have information about their graduates, it is best to carry out a census in which data is collected from all graduates over a period of time. Therefore, the studies of graduates can be classified in terms of their dimensions of years of graduation in:

- Studies aimed at censuses of graduates: carried out in the first year of graduation, the objective of

which is to concentrate information regarding the training received and the employment situation.

- Job placement surveys: carried out within the second and fifth year after graduation, designed to characterize the process of job placement, completion of studies and institutional satisfaction.
- Employment trajectory surveys: carried out five years after graduating and its purpose is to obtain information on their employment situation, skills acquired and training throughout life.

From the scope of the study of graduates, it is suggested to use the survey as an instrument, which is a reliable instrument. At the same time that this instrument is required to be applied to a significant sample, preferably to the entire generational section, this will allow greater precision and confidence in the data obtained.

At the same time, the [ANUIES \(2003\)](#) proposes the following within the dimensions of its variables: general characteristics of the graduates, continuation of training, incorporation into the labor market, location in the labor market, professional performance, opinions about the professional training received and recommendations for improving the professional training profile [Fuentes, \(2012\)](#).

Various methods and various data sources have been used to analyze the labor market for professionals. Some research favors the use of data from the statistical institutes of the various countries, which, although they have the advantage of being representative at the national level, have the inconvenience of having generic and non-specific information, which in fact prevents the detailed knowledge of said market. In this work, data from a survey of graduates of a public state university in Mexico, the State University of Valle de Ecatepec, as well as their employers, are used. The questionnaire and, in general, the methodology used to carry it out, follow the guidelines established by ANUIES (1998). For the purposes of this research, a set of questions was added to the questionnaire to capture the various characteristics of the professional labor market. The survey operation was carried out in the month of May 2022.

#### POPULATION AND SAMPLE

A standardized multiple-choice survey was conducted with 62 employers who hire professionals with a degree in rehabilitative human acupuncture in their care centers.

#### DATA PROCESSING

In accordance with the General Data Protection Regulation. A data **collection will be carried out** through the surveys and their content, to later give way to the

**reception, organization, structuring and storage for analysis and interpretation, also the data management will consist of the consultation, use, dissemination of results, extraction and storage of information** for statistical purposes only.

## IV. RESULTS

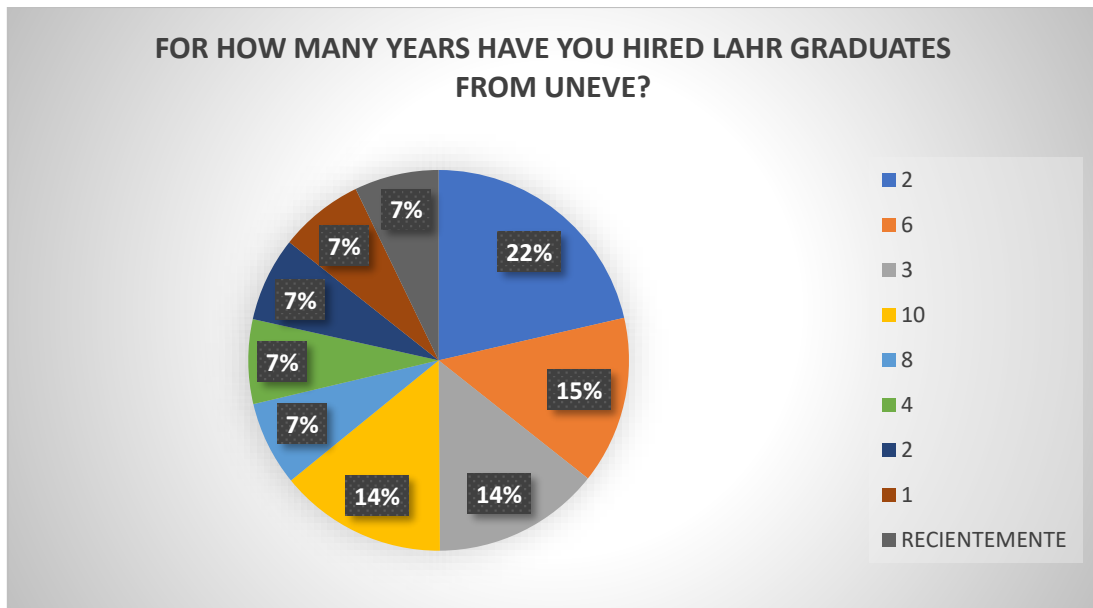
A survey was conducted of 62 employers of graduates of the Human and Rehabilitative Acupuncture degree, said survey consisted of 24 reagents, among which employers were asked about the panorama they have in relation to the knowledge, skills and competencies of the graduates already implemented. in the labor area, patient care and effectiveness of the treatments in which the graduate of said degree intervenes,

We present the centers that answered the . The first question is to know for how long LAHR graduates have been hired, this in order to know the length of employment that our graduates can aspire to (See Graph 1), where we observe that one of the centers hires professionals graduates of the LAHR for 10 years, while the response recently refers to a contract period of less than one year.

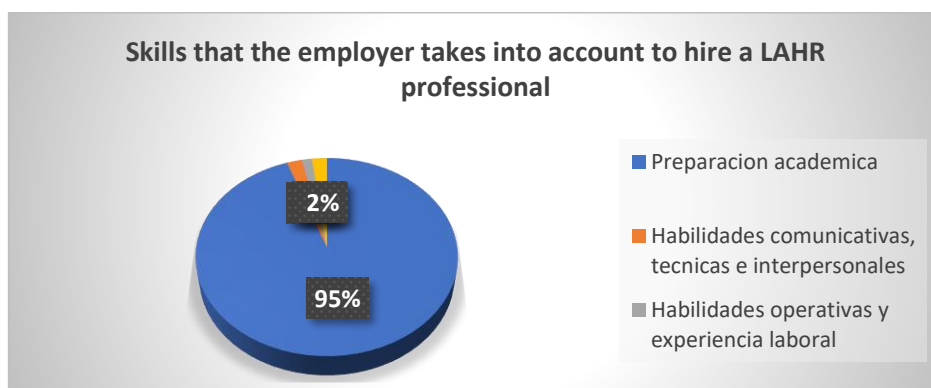
95% of our surveyed employers consider academic preparation as a fundamental part of hiring a LAHR graduate, followed by technical and interpersonal communication skills. This is of vital importance for the program since it offers us the strengthening of the respective subjects that promote the graduation profile of our professionals (See Graph 2).

Let us remember that the personal skills and values that a LAHR graduate has are of vital importance, in order to be included in the labor field, since each company has its decalogues, codes of ethics and its business values, for which the graduate must agree with these policies and employers take assertive communication into account, followed by teamwork, punctuality and development of critical thinking (See Graph 3)

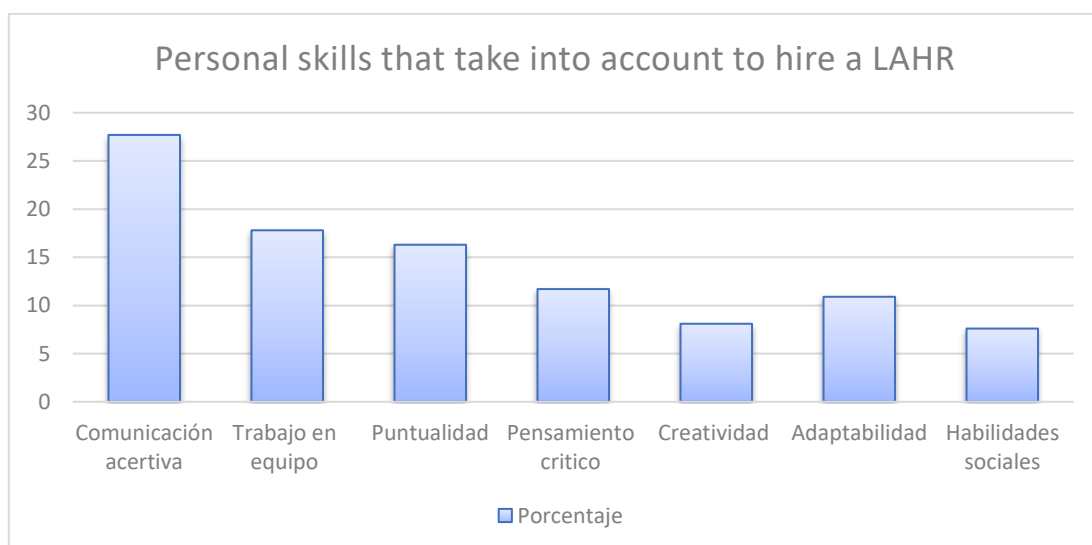
The knowledge that a professional requires to be hired is also considered of vital importance and impact to strengthen the profile of the LAHR graduate, highlighting the first two that employers need: First, that the graduates have practical theoretical knowledge of traditional Chinese medicine, followed by knowledge of physical means focused on rehabilitation, however, the one that they least indicate as important in their centers, is the nutritional and Phytotherapeutic recommendation, for which, this constitutes an area of opportunity in the improvement of the graduate's curriculum as a means to strengthen the graduate profile (See Graph 4).



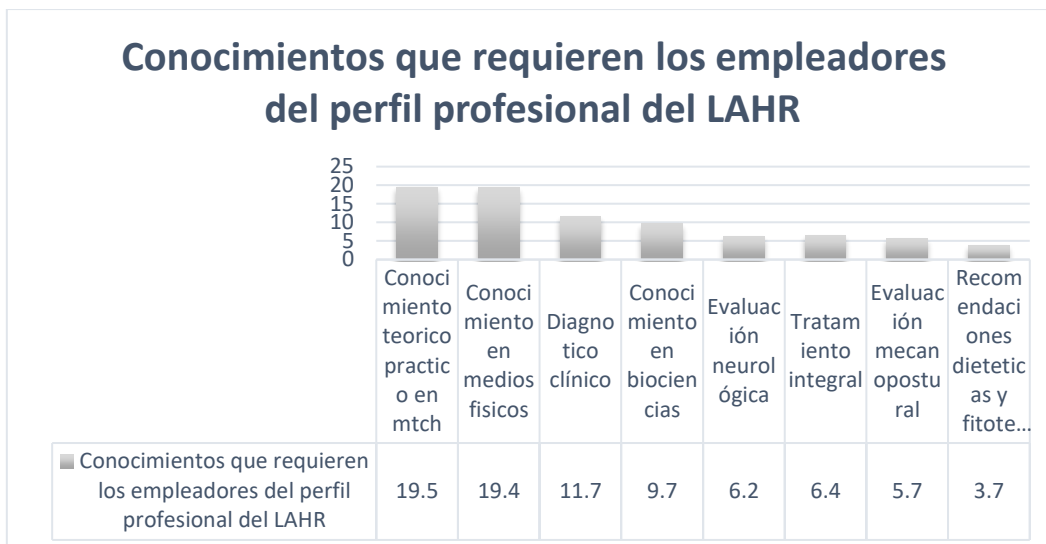
Graph 1 Time they have been hiring LAHR graduates



Graph 2 Skills that the employer takes into account to hire a graduate of the LAHR

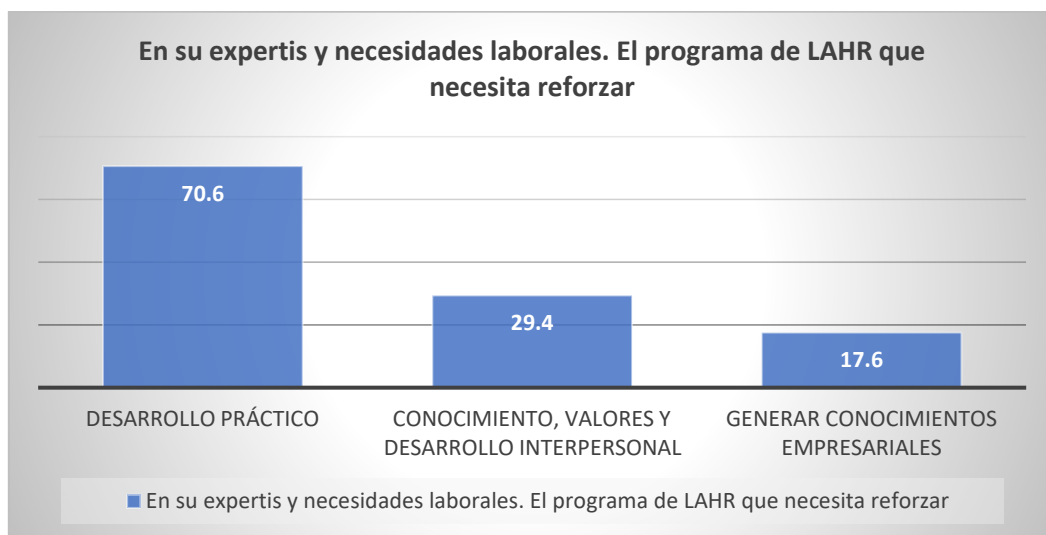


Graph 3 Personal skills that employers take into account



Graph 4 Knowledge that employers require in a LAHR graduate

In relation to the above, the questioning of suggestions to be reinforced in the LAHR graduate profile is developed, for which employers request more practical development, as well as the development of interpersonal skills (See Graph 5 and Table 1).



Graph 5 Recommendations to strengthen the LAHR academic program

Table 1 Recommendations for improvement in the LAHR discharge profile

a) Promote continuous education and constant updates	70.6%
c) Begin practical training at earlier stages of their training	41.2%
b) Provide incentives for their education and exchange programs with other Latin American countries	29.4%
d) None	0%

Salaries offered by employers range from 8,000 to 12,000 pesos per month. Only one employer reported offering a salary of more than 20,000 pesos. Let us remember that in the professional charts and tabulators we still do not have standardized salaries, so it is an area of opportunity to establish these criteria in the government proposals planned by the UNEVE administration (See Table 2).

Table 2 Salaries of graduates a

a) From 8,000.00- 12,000.00 pesos	64.7%
b) From 12,500-16,000.00 pesos	17.6%
c) From 16,500-20,000 pesos	11.8%
d) More than 20,000 pesos	5.9%

The pathologies that are treated most frequently in the centers can be seen in Table 3, and they have to do with musculoskeletal disorders and metabolic disorders. The cause of unemployment of the graduates was also surveyed

or because it is considered that the graduates do not find employment, for which the answer expressed by the employers was the lack of practice and academic preparation (See Graph 8).

Table 3 Pathologies that attend the most in the contracting centers

Most frequent pathologies
tendinitis
Metabolic syndrome
low back pain
sciatica
Sequelae of cerebrovascular accident
Facial paralysis
sprains



Graph 7 As an employer, your perspective on why acupuncture graduates do not find employment



## V. CONCLUSIONS

Based on the foregoing, we can conclude that the Bachelor of Human Rehabilitation Acupuncture is a complete degree and is sufficient in knowledge with a wide field of application, and constitutes a great contribution to the health of the Mexican population that constitutes a great health tool. , effective to contribute to the improvement, detection, health promotion as well as effective treatment at low cost. However, the fundamental problem lies in the fact that there is a lack of knowledge regarding its scope, which is why health dissemination programs are proposed to bring this useful health tool to the communities, as well as making a call to the competent authorities. to endorse and give recognition to the work of Acupuncture in Mexico, in this way, the working conditions for graduates of said degree, could expand their field of action and therefore generate more and better jobs in the community of university graduates of the LAHR. Likewise, employers would have the possibility of making their centers true places where the patient recovers his health by rebalancing it, which would be reflected in greater economic gains and the possibility of generating more and better jobs for LAHR graduates, and in this sense to provide better care to their patients and with all this dignify the professional practice of Rehabilitative Acupuncture in our country.

## REFERENCES

- [1] NOM-017-SSA3-2012.
- [2] Berman BM, Langevin HM, Witt CM, Dubner R (July 2010). « Acupuncture for Chronic low - back pain '. *New England \_ Journal medicine \_ (in English)* **363** (5):454-461.
- [3] White A., Ernst E. (2004 ). «A brief history of acupuncture » . *Rheumatology* ( 5): 662-663. PMID 15103027 . doi : 10.1093/ rheumatology /keg005
- [4] ANUIES (1998). *Basic scheme for graduate studies*, Mexico, DF, National Association of Universities and Institutions of Higher Education.
- [5] ANUIES (2003). *Labor market for professionals in Mexico*, Mexico, DF, National Association of Universities and Higher Education Institutions.
- [6] ANUIES (2006). *Consolidation and advancement of higher education in Mexico. Diagnostic elements and proposals*, Mexico, DF, National Association of Universities and Institutions of Higher Education.
- [7] Allen, J. and Van der Velden , R. (2001). *Education mismatches versus skill mismatches effects on wages , job satisfaction , ando n- the job search* , Oxford, Economic Papers , 53(3): 434-452).
- [8] Becker, G. (1993). *Human Capital: a theoretical and empirical analysis , white special reference to education* , Chicago, The University of Chicago.
- [9] Di Pietro, G., & Urwin , P. (2002). *Education and skills mismatch in italian graduate labor market* , London, Westminster Business School , University of Westminster .
- [10] Gonzalez Betancor, SM (2003). *Labor Insertion, Educational Misalignment and Labor Trajectories of Graduates in Specific Vocational Training on the island of Gran Canaria*, Las Palmas de Gran Canaria: University of Las Palmas de Gran Canaria, Faculty of Economic and Business Sciences. Available at <http://www.eumed.net/tesis/smgb/>.
- [11] Notimex (2009-02-05). *SEP: increases unemployment rate of professionals*. Mexico, DF Available at <http://www2.esmas.com/>.
- [12] Rubio Goose, July (2006). *Educational policy and higher education in Mexico. 1995-2006: a balance*, Mexico DF, Ed. Economic Culture Fund.
- [13] Sattinger , Michael (1993)." Assignment models of the Distribution of Earnings ", in *Journal of Economy Literature* , *American Economics Association* , vol. 31(2), 831-80.
- [14] SEP-SES (2009). *Higher education: current situation and perspectives*, Mexico, DF, Undersecretary of Higher Education of the Ministry of Public Education.
- [15] Alpha. (2006). *Manual of instruments and recommendations on the study of graduates*. Monterrey: Tecnológico de Monterrey Noriega Publishers.
- [16] Avila, M., & Aguirre, C. (2005). The monitoring of graduates as an indicator of teaching quality. *Interuniversity Electronic Journal of Teacher Training*, 1-5.
- [17] Ávila Carreón, F., Galeana Figueroa, E. and Aguila-socho Montoya, D. (2014). Human capital vs profitability. *Journal of Research in Administration Sciences* 4.7, pp : 55-74.
- [18] Hernandez, B., & Velasco-Mondragon, H.E. (2000). Cross-sectional surveys. *Public Health*, 447-455.
- [19] Hernández, R., Fernández Collado, C., & Baptista, P. (2012). *Investigation methodology*. Mexico City: McGraw-Hill.
- [20] Herrera Fuentes, J. L. (2006). The university-company link in the training of university professionals. *Research News in Education*, 1-30.