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Improving the quality of life of older adults through acupuncture

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Abstract *— The study, titled " Improving the Quality of Life of Older Adults through Acupuncture, " investigates the impact of acupuncture on improving mobility in older adults treated in acupuncture clinics. Given the increasing aging of the Mexican population and its associated problems, such as mobility limitations and chronic conditions (diabetes, hypertension, among others), this research seeks to evaluate the efficacy of acupuncture as a complementary therapy. Methodology: A quasi-experimental design was used, with a sample of 45 patients, mostly women, who received acupuncture sessions focused on strategic points. Goniometry was used to measure changes in range of motion in various joints, including the shoulders, elbows, and wrists, before and after treatment. Results: Patients showed significant improvements in their range of motion after the sessions. Although completely normal ranges of motion were not achieved, there was clear progress in joint flexion, extension, abduction, and rotation, with increases proportional to the number of sessions completed. Conclusion: Acupuncture proved to be an accessible and effective intervention for improving the quality of life of older adults by reducing their mobility limitations, offering a cost-effective alternative, and decreasing dependence on polypharmacy.*

Keywords *— GONIOMETRY, ACUPUNCTURE, ELDERLY*

I. INTRODUCTION

Over the years, Mexico has seen an increasing older adult population. As of the second quarter of 2022, it was estimated that 17,958,707 older adults lived in Mexico. This represents 14% of the country's total population. The majority of employed people aged 60 and over are self-employed (49%), followed by paid subordinate workers (38%). In Mexico, 70% of employed older adults work informally.

According to the burden of disease that afflicts our country, among the first 8 diseases are diabetes, hypertension, conditions that afflict older adults, which is why this conditions, a life expectancy at birth is close to 75.4 years on average. According to the Projections, in 2021 the life expectancy, observing a regional gap of just over three years between Mexico City (76.7 years on average) and Guerrero (73.5 years on average).

It is important to review the figures since the elderly population in Mexico is expected to increase by 12% by 2025. This means that institutional and social responses must be prepared to address the present and future challenges posed by demographic aging.

This study addresses one of the important issues facing the vast majority of older adults: they present some degree of limitation in their mobility and

therefore suffer from difficulties in adapting to move around. This deterioration generates vulnerability, which results in the definition of fragile people, with a reserved prognosis in some cases, which include disability, dependency, falls, hospitalization and mortality in older adults.

II. DEVELOPMENT

We must understand what aging is, and although there are many definitions, we understand that it is a natural process of life where morphological, functional, and psychological changes occur, which the passage of time causes irreversibly in human organisms. However, not everyone ages in the same way or at the same time. We must also understand that an older person or an older adult is defined according to two factors: age, starting at 60 years of age, and employment status.

As we mentioned, aging is a process that involves significant changes. These include fundamental physiological changes and an increased risk of chronic diseases. After age 60, the greatest burden of disability and death occurs due to age-related hearing, vision, and mobility loss, as well as noncommunicable diseases such as heart disease, stroke, chronic respiratory diseases, cancer, and dementia. (OMS, 2015)

Health problems associated with the aging of the population cannot be analyzed from an individual perspective. Collective orientation prevails over individualistic orientation; roles are highly valued, and members of these groups are more oriented toward coexistence and the needs of the family unit. Familism can be analyzed in three dimensions: the demographic dimension, which considers the size, structure, and patterns of marriage and fertility; the behavioral dimension, which defines the activities through which roles are fulfilled, that is, the economic, instrumental, and/or emotional support provided by each member. Finally, the attitudinal dimension, which considers family values such as loyalty, reciprocity, and solidarity. (SEDESOL, 2010)

Search for information on mobility angles in the elderly and pathologies that cause it

Acupuncture is a discipline that dates back thousands of years and originated in China. It is currently recognized by the WHO as a practice in which significant progress has been made. Although it was originally a component of traditional Chinese medicine, it is now used worldwide. According to reports provided by 129 countries, 80% of them currently recognize the use of acupuncture. (OMS, 2013)

Studies have revealed that people are turning to TCM for a variety of reasons, including an increased demand for all health services, a desire for more information to increase awareness of available options, growing dissatisfaction with existing health care services, and a renewed interest in "whole-person care" and disease prevention—all aspects frequently associated with TCM. Furthermore, TCM recognizes the need to emphasize quality of life when a cure is not possible. (OMS, 2013)

Therefore, we emphasize the importance of using acupuncture services to improve patients' quality of life, reduce polypharmacy, and improve their financial situation, given that the use of this service at the Comprehensive University Clinic (CIU) is low-cost and accessible to people of different economic statuses.

AIM

Assess older adults' mobility levels and propose a comprehensive treatment plan

III. MATERIAL AND METHODS

Quasi-experimental, prospective, longitudinal, randomized design

For this study, an analysis of acupuncture consultations was taken, where the number of patients using the acupuncture service in 2024 was compared.

IV. RESULTS

In acupuncture consultations reported for the period September - December 2024, a total of 6869 of which 6450 correspond to subsequent consultations and 528 first-time consultations (see Chart 1)

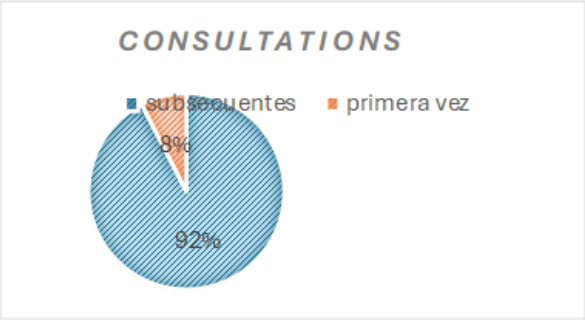

Chart 1. Comparison of the number of subsequent consultations and the first time.

Taking into account gender, women are the ones who use the acupuncture service more in relation to men, of every 100 women who used the service there were 29 men who did so, this is attributed to the acupuncture consultation service hours, since this goes from 7:00 am to 1:00 pm, being working hours and where the majority of women who attend are housewives. (See Chart 2)

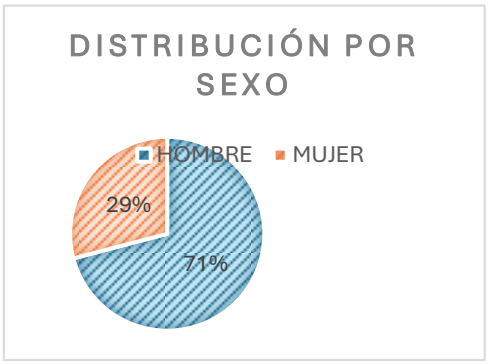

Chart 2: Gender preference for using acupuncture services

Of the total population seeking acupuncture consultations, 70% of older adults used the service, considering the ages of 60 to over 91 years, compared to other ages ranging from 0 to 59 years. (See Chart 3)

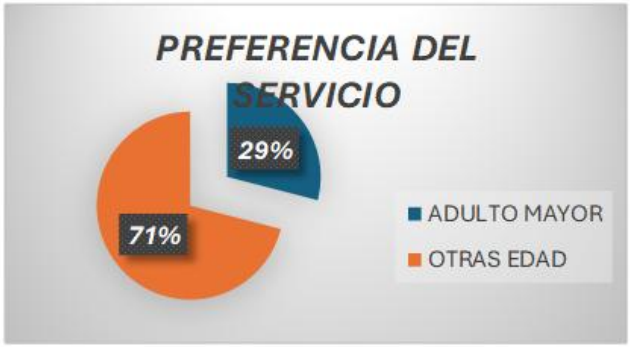

Chart 3, Represents the percentage of older adults who use acupuncture services in relation to other ages

Myoarticular problems, in the area of limited movement, were addressed in geriatric patients, and upper limb range of motion measurements were taken as an exercise in skill development and patient management. They were trained in the application of shu points in the blood and energy generation cycle during 10 sessions, the average of which was 6 sessions used for the preparation of this report.

These were the results of the intervention.

Of the total population who agreed to participate in the study, 45 patients were enrolled. 76% were women and 24% were men.

Chart 4. Proportion of men and women who agreed to enter the service

Goniometry assessment tests were performed on all participants, taking the scale by the American Academy of Orthopaedic Surgeons (AAOS) as a starting point. Tables are presented with the measurements at the beginning and after treatment.

Shoulder movements. Regarding this movement, we find that it is one in which great limitations are observed, since most elderly people report no longer being able to perform complete shoulder movements due to repetitive loads, which were performed incorrectly. Because they cannot move their shoulder, we observed the following in goniometry:

We observed significant changes in shoulder movement after applying the treatment, observing a significant improvement. Fewer patients had low ranges of motion while more patients had improvement in their range of motion. Performing a proportion test, the improvement was 45% to 68% with respect to the range of motion. It is worth mentioning that the patients did not completely increase their mobility angles but they did improve them. See Graphs 5 to 10. When performing the Pearson correlation test, we observed interdependence in the variables with a positive

association, that is, as the sessions increase, the angles of mobility increase.

Which indicates a change in range of motion of 6 degrees between defined interval scale

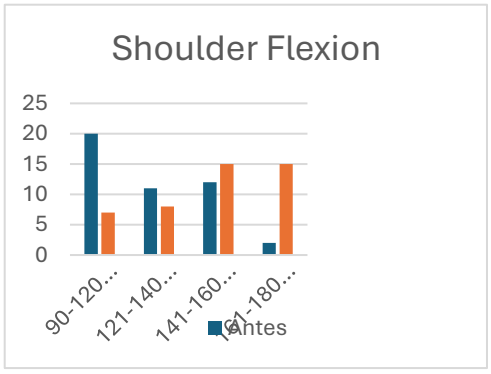

Chart 5 Comparison of before and after treatment in the shoulder flexion movement

Which indicates a 5 degree change in range of motion between the defined interval scale

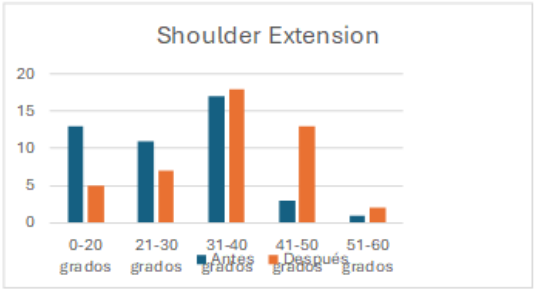

Chart 6 Comparison of before and after treatment in shoulder extension movement

Which indicates a 5 degree change in range of motion between the defined interval scale

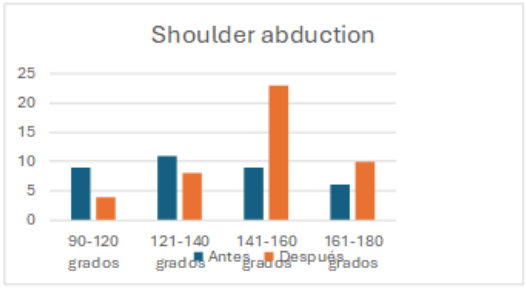

Chart 7 Comparison of before and after treatment in the shoulder abduction movement

Which indicates a 5 degree change in range of motion between the defined interval scale

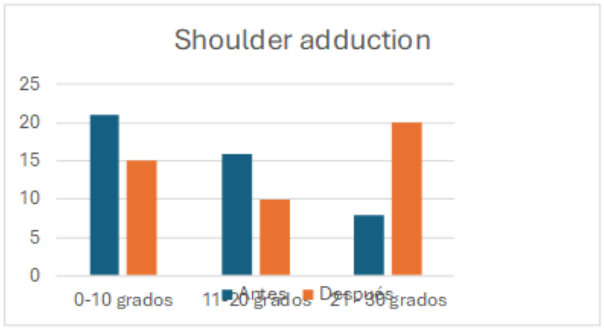

Chart 8 Comparison of before and after treatment in shoulder adduction movement

Which indicates a change in range of motion of 8 degrees between the defined interval scale

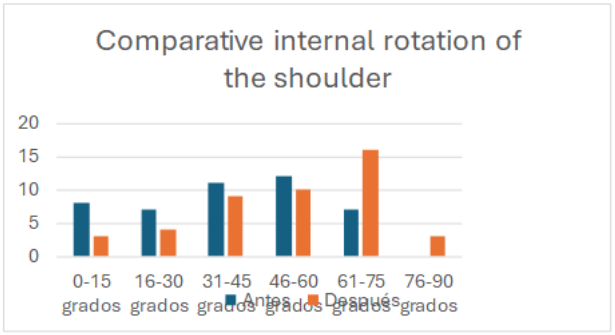

Chart 9 Comparison of before and after treatment in the internal rotation movement of the shoulder

Which indicates a 7 degree change in range of motion between the defined interval scale

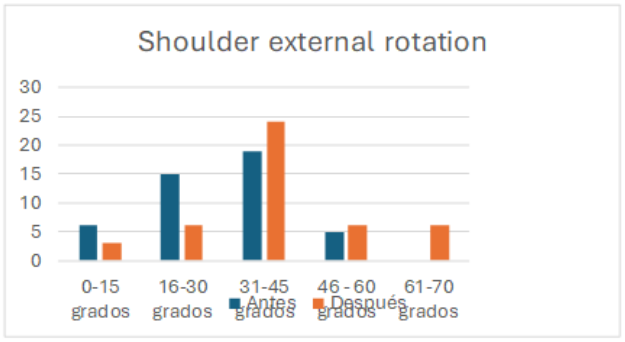

Chart 10 Comparison of before and after treatment in the internal rotation movement of the shoulder

In relation to the elbow-forearm movements according to the AAOS scale, we only evaluated flexion, pronation, and supination. We observed significant changes in movement in the measurements taken after applying the treatment, noting that the patients increased their ranges of

motion in a proportion; the improvement was 55% to 71% with respect to the amplitude. It is worth mentioning that the patients did not completely increase their mobility angles, but they did improve them. See Graphs 11 to 13. When performing the Pearson correlation test, we observed interdependence in the variables with a positive association, that is, as the sessions increase, the mobility angles increase.

Which indicates a 6 degree change in range of motion between the defined interval scale

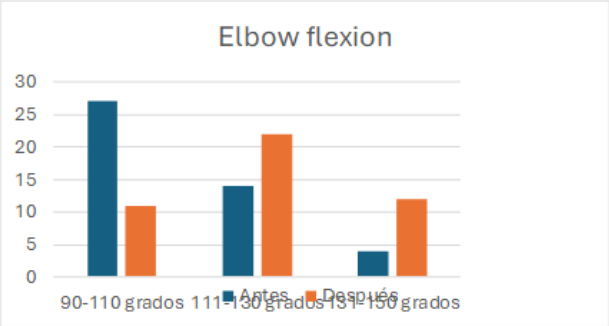

Chart 11 Elbow flexion before and after treatment

Which indicates a 6 degree change in range of motion between the defined interval scale

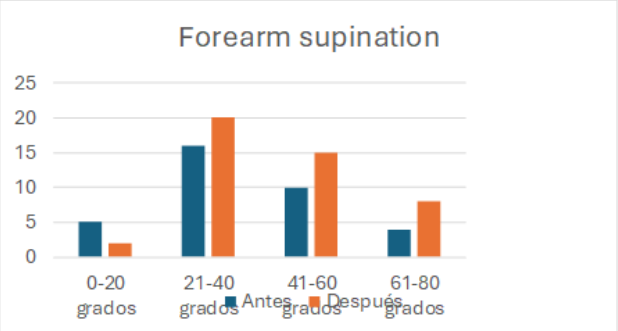

Chart 12 Supination before and after treatment

Which indicates a 6 degree change in range of motion between the defined interval scale

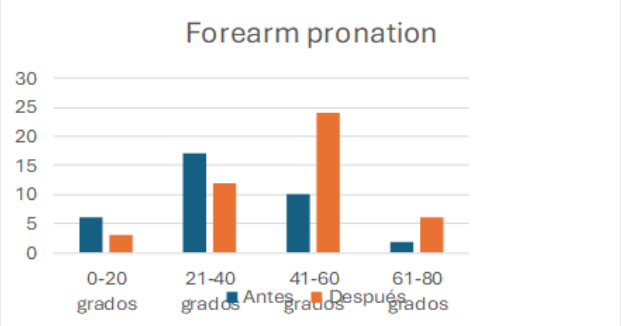

Chart 13 Supination before and after treatment

Hand movement, goniometry of flexion, extension, radial and ulnar deviation was performed, detecting significant changes in movement in the measurements taken after applying the treatment, noting that patients increased their ranges of motion in a proportion the improvement was 45% to 65%% with respect to the amplitude, it is worth mentioning that the patients were not able to completely increase their mobility angles but they did improve them See Graphs 14 to 17. When performing the Pearson correlation test we observed interdependence in the variables with a positive association, that is, as the sessions increase the mobility angles increase.

Which indicates a 6 degree change in range of motion between the defined interval scale

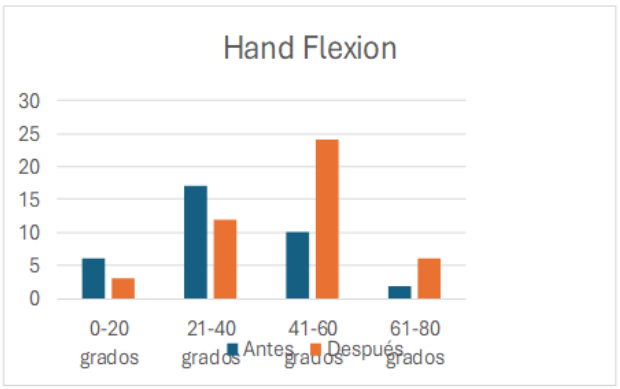

Chart 14 Hand flexion before and after treatment

Which indicates a 7 degree change in range of motion between the defined interval scale

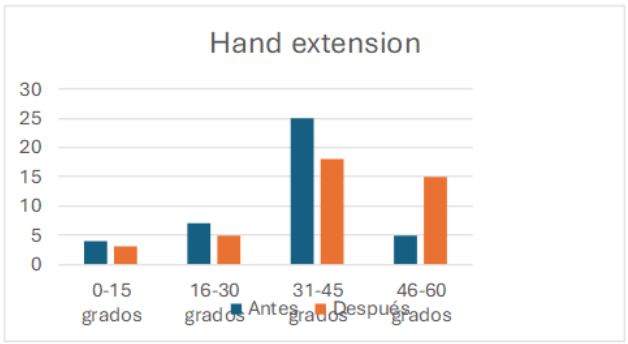

Chart 15 Hand extension before and after treatment

Which indicates a change in range of motion of 8 degrees between the defined interval scale

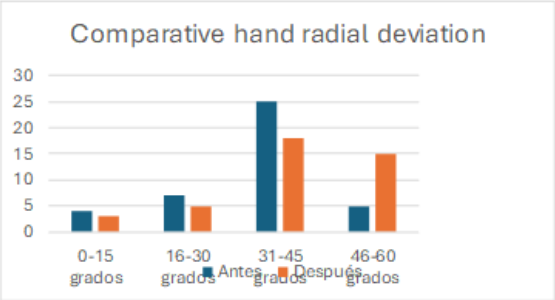

Chart 16 Hand extension before and after treatment

Which indicates a 6 degree change in range of motion between the defined interval scale

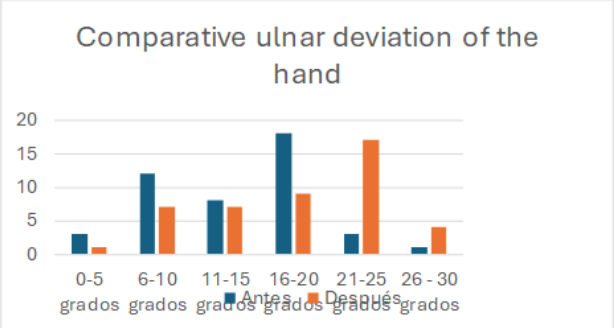

Chart 17 Hand extension before and after treatment

III. CONCLUSION

This study demonstrates that acupuncture is an accessible, effective, and low-cost intervention for improving the quality of life of older adults, particularly in joint mobility. Through the application of specific techniques and systematic measurement using goniometry, a significant increase in the range of motion of the shoulders, elbows, forearms, and hands was observed after treatment, directly correlating with the number of sessions received. These results support the use of acupuncture as a complementary alternative to conventional therapies, promoting a decrease in drug dependence and improving patients' physical function. Furthermore, the study emphasizes the need to strengthen acupuncture services in university clinics and health centers, considering the growing aging population and the demand for comprehensive solutions to preserve the autonomy and well-being of older adults.

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