Qi Gong as a Teaching Instrument to Reduce Academic Stress

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Abstract— The purpose of this research is to determine the effects of Academic Stress (EA) in the educational spaces of students in the first semesters of the degree in Rehabilitation Human Acupuncture (AHR), which not only affects students, but also anyone who has a transaction role in the face of a stressful factor, understanding that in individuality it will generate a dependent variable between the interpretation before the stimulus or situation with the individual's resources, which in the first instance, are psychological in a process of evaluation of requirements or demands to know if that stimulus or situation is stressful, subsequently the result of the resource vs. threat variables together with the interdependencies of unpredictability, uncontrollability and constancy of stress.

Objective: Intervene in the reduction of stress, as well as in the improvement of cognitive aspects through the practice of Qi gong (QG).

Research Methodology: A non-experimental cross-sectional study with a comparative descriptive scope was carried out to measure and compare variables and categories of academic stress of the participants. The already validated scale of academic stressors was used (Cabanach, Souto-Gestal and Franco (2016)). It consists of 54 items and is used in university students, the responses are Likert type of five points (1=never, 2=almost never, 3=sometimes, 4=almost always and always=5). Results: The cognitive aspects were evaluated and we obtained that the QG helps the educational and learning process, as well as the perception of work and educational dynamics. In the following graph we see how to feel that sometimes the perception never improves and rarely what tells us that the practice of QG improves, the perception and the sensation of overload of work, this is due to the fact that it generates relaxation and better oxygenation. The cognitive aspects were evaluated and we obtained that the QG helps the educational and learning process, as well as the perception before work and the educational dynamics. As we can see in the following graph, we see how to feel that sometimes it improves the perception never and rarely what tells us that the practice of QG improves the perception and feeling of overload of work, this is because it generates relaxation and better oxygenation.

Keywords— Qi gong, academic stress, stress.

I. INTRODUCTION

The effect of chronic stress will be expressed in the rupture of the physiological balance in somatic, visceral, emotional, cognitive and behavioral complaints, which seeks to intervene from Qi Gong (QG) and its energy management of the channels of Traditional Medicine. China (MTCh) which has important complementary elements such as its function-oriented description of organ systems, its emphasis on the modulation of functional balance.
Understanding it as a method of EA modulation, we are looking for results that could help us not only to carry out cognitive-behavioral strategies or learning processes, and how they improve from stress that could complement the diagnosis and treatment based on a biological vision, seeing stress at a practical level as the breakdown of balance in one or several systems, where pathogens have different ways to generate or express this imbalance in the host, against its factors of defense or protection and including the maturation and the duration or progression of this imbalance, will lead to chronic states or even death.

The study was cross-sectional, descriptive and comparative with a sample of 76 students from the 2nd. Semester in the AHK area of the Ecatpec Valley State University (UNEVE), using the Academic Stressors scale (ECEA), in the public health research program and interventions in stress management, to quantify the EA and qualify the benefits of the Medical QG for stress management, observing the attention capacity in its postural mechanics, breathing and the activation of interoceptive, exteroceptive and nociceptive signals. The Lic. in AHK understands his wide field of intervention, which is in itself a duty in the integrative commitment of TCM concepts, such as taijítú or Yin & Yang, with concepts of the Natural History of Disease, it is the result in the heuristic method in a civilization and in this case in the group of students, corresponds to the dialectic of breaking the balance between Health-Illness, either by yang-function or yin-structure just to mention an example, but understanding our humanistic side in the clinical part, when treating the patient and not the disease.

And even though these issues have been the subject of study for many others, giving more to talk about, this research seeks to address the study and classification that the QG has given in its different practices (Military, Martial, Medical or Philosophical), specifically taking the medical information provided by M. ENT. Consuelo García Trejo as a coping strategy tool for university stress management and in the Lic. AHR student, a diagnostic tool integrating activation in a playful way of its different signals and the maintenance of a balance of physiological stress or eustress.

II. DEVELOPMENT

Stress has been studied in its different spheres, based on the organizational environment from which the demand for action arises (Orlandini, 1999), this being hospitalization stress (Ioannou, 2017), work stress (Sidelski 2004), stress family (Musitu & Callejas, 2017), understanding that stress increases or decreases depending on the role of demand according to the organization, the present investigation evaluates stress in educational spaces, ruling out teacher occupational stress within its methodological variables (Behnke, 2018), focused on higher level students which makes it an Academic Stress (EA) (Yıldırım, Karaca, Cangur, Acıkgoz & Akkus, 2017).

| Stress increases as the student progresses in his studies (Putwain, 2007) |
|---------------------------------|---------------------------------|
| **school stress** | **academic stress** |
| Primary | (Connor, 2003) |
| Preparatory | (Quito, Tamayo, Buñay, & Neyra, 2017; Sierra, Urrego, Montenegro & Castillo, 2015; Gallagher and Millar, 1996) |
| Secondary | (Aherne, 2001) |
| college students | (Correa-Prieto, 2015; Tessa, 2015; Dyson and Renk, 2006) |
| postgraduate | (Moreno & Barraza, 2018) |

The EA is defined as a reaction of physiological, emotional, cognitive and behavioral activation (Soto-Vásquez & Arkin, 2018) before stimuli and academic events, understanding the relationship with variables such as gender, age, profession, coping strategies, etc. (Berrio & Mazo, 2011). New research has supported the cognitive systemic model of AD proposed by Barraza (2005; 2006; 2007a; 2007b; 2007c; 2007d, 2008; Barraza and Acosta, 2007; Barraza and Silerio, 2007), It is based
on the general systems theory (Colle 2002), and on the transactional model of stress (Lazarus & Folkman 1986).

Where the different theories of AD based on the observation of the stimuli that generate it (Selye, 1960, 1974; Holmes & Rahe, 1967; Weitz, 1970; Barraza, 2012), the response to said stimuli (Selye, 1960, 1974; Sandin, 1995), their interaction (Lazarus and Folkman, 1986, p. 44) and coping strategies (Barraza & Malo, 2012). Based on hypotheses that observe the systemic-processual components of academic stress, this refers to the constant flow of input (input) and output (output) that all systems present to achieve their balance, in the system-environment relationship. These components of academic stress are three: stressors, symptoms and coping.

- **Stressful stimuli (Input)**

Based on the hypothesis of the AD as a psychological state: Since in general, a stressor is a "stimulus or threatening situation that triggers a generalized and non-specific reaction in the subject" (Barraza, 2005, p. 4), the AD is a state essentially psychological because it is made up of the assessment that the person makes (minor stressors), which makes it a physiological stress also called eustress, but when the assessment presents a threat to the vital integrity of the individual and they are unrelated to their assessment (major stressors), it can lead to pathological stress or distress (Cruz & Vargas, 2001).

There is talk of Eustress when the responses to stressful stimuli are carried out in harmony and adequately, respecting the physiological and psychological parameters of the subject in relation to the biological and physical demand/consumption of energy provided by the general adaptation system. Conversely, when the responses have been insufficient or exaggerated in relation to the demand/consumption of resources, whether at the biological, physical or psychological level, then Distress or Negative Stress occurs.

The quality of the stressors is also associated with the degree of unpredictability and uncontrollability they possess (Amigo, 2000).

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Taking an exam</td>
<td>Competition with group mates</td>
<td>group competitiveness</td>
<td>Methodological deficiencies of the teaching staff</td>
</tr>
<tr>
<td>Presentation of work in class</td>
<td>Overload of homework and school work</td>
<td>Task overloads</td>
<td>student overload</td>
</tr>
<tr>
<td>Intervention in the classroom (answer a teacher's question, ask questions, participate in discussions, etc.)</td>
<td>Excess personal responsibility for fulfilling school obligations</td>
<td>Excess responsibility</td>
<td>Beliefs about academic performance</td>
</tr>
<tr>
<td>Go up to the teacher's office during tutorial hours</td>
<td>The type of work that teachers ask you for</td>
<td>Type of work that is required of you</td>
<td>interventions in public</td>
</tr>
</tbody>
</table>

Indicators of systemic imbalance

Based on hypotheses of the indicators of the systemic imbalance implied by the AE: the indicators or symptoms of the stressful situation (systemic imbalance) are classified as physical, psychological and behavioral reactions. "This set of indicators are articulated in an idiosyncratic way in people, in such a way that the systemic imbalance will be manifested differently, in quantity and variety, for each person" (Barraza, 2008, p. 274).

<table>
<thead>
<tr>
<th>Symptoms or Reactions</th>
<th>physical</th>
<th>psychological</th>
<th>behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep disorders (insomnia or nightmares)</td>
<td>Feels feelings of depression and sadness (down)</td>
<td>Desires to yell, hit or insult</td>
<td></td>
</tr>
<tr>
<td>Drowsiness or increased need for sleep</td>
<td>memory decline</td>
<td>constant mood swings</td>
<td></td>
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<tr>
<td>Fatigue or chronic tiredness</td>
<td>Fear, Fear or Panic</td>
<td>Overeating or not eating</td>
<td></td>
</tr>
<tr>
<td>Headaches or migraines</td>
<td>Restlessness and Nervousness</td>
<td>Drink alcoholic beverages</td>
<td></td>
</tr>
<tr>
<td>Digestive problems (indigestion, diarrhea or constipation)</td>
<td>excessive worry</td>
<td>smoking more frequently</td>
<td></td>
</tr>
<tr>
<td>Scratching, biting nails, rubbing, etc.</td>
<td>Catastrophic thinking (everything is going to go wrong)</td>
<td>Tendency to go from one place to another without reason</td>
<td></td>
</tr>
<tr>
<td>Hyperventilation (rapid breathing)</td>
<td>Difficult to focus</td>
<td>Withdrawal or isolation from others</td>
<td></td>
</tr>
<tr>
<td>Shortness of breath or feeling suffocated</td>
<td>slow thinking</td>
<td>Apathy in the way of dressing or grooming</td>
<td></td>
</tr>
<tr>
<td>excessive sweating</td>
<td>feeling of insecurity</td>
<td>Reluctance to do school work</td>
<td></td>
</tr>
<tr>
<td>Panic or anxiety attack</td>
<td>Absenteeism from classes</td>
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</tbody>
</table>
### Coping strategies (output)

Based on the hypothesis of coping as a restorer of systemic balance: faced with the imbalance caused by stress, the individual implements various coping strategies to restore the balance of the system. Although the coping strategies are very varied.

### QIGONG BEFORE ACADEMIC STRESS

The QG has 3 important characteristics that help deal damage:

- The first would be that they are slow movements that activate without reaching a point that can affect them, such as intense and short-duration exercises, such as accelerations and isometric exercises that redistribute blood flow to contracting muscles and priority tissues. How heart and brain, which will generate periods of hypoxia to kidney, spleen and liver. ([Duncker & Bache, 2008](#))

- The second is breathwork, which has been shown in studies of yogic breathing exercises to not only help relieve the stress of life, but also to improve an individual's antioxidant status ([Bhattacharya; Pandey; Verma 2002](#)).

- And finally, the third is meditation or mindfulness, which in research has shown a better quality of life and a decrease in stress symptoms in patients with breast and prostate cancer, and resulted in possibly beneficial changes in the functioning of the hypothalamus-pituitary-adrenal (HPA) axis, in the relationships between participation in a meditation or mindfulness-based stress reduction program and hormone levels ([Carlson; Speca; Patel; Goodey 2004](#)).

### Qi Gong

In China the word "Gong" (or Kung) is often used interchangeably with the word "Gong Fu" (or Kung Fu) which means energy and time. Any study or training that requires a large amount of energy and time to acquire knowledge or to be carried out is known as Gong Fu. This term can be applied to any study or special ability, as long as it requires time, energy and patience. Consequently, the correct definition of Qi gong would be any study or training that is related to Qi and that requires a considerable amount of time and effort. ([Jang, 2022](#))

Qi Gong has always been considered as a set of specifically Chinese practices for body care that allow to extend life by reinforcing the original energy. Its effectiveness has been demonstrated for millennia by millions of followers. In the traditional Chinese conception, a decrease in the level of vital energy is translated. First, in a series of negative emotions before this imbalance manifests itself in the form of organic disease. Qi gong aims to regulate blood circulation, stimulate the functions of all organs, open the mind and free the spirit from the problems that affect it. ([Jang, 2022; Clark & Pachón, 2003; Yang & Jwing-ming, 2004](#))

### Instructor and facilitator procedure

Self-healing with Prouzet's Qi gong in 2001 explains it very simply.

<table>
<thead>
<tr>
<th>Constant or uncontrolled irritability, anger, or rage</th>
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<tbody>
<tr>
<td>disoriented thinking</td>
</tr>
<tr>
<td>Feeling of having an empty mind</td>
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<tr>
<td>Mental block</td>
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</tbody>
</table>
“Qi Gong training methods differ according to the five traditional schools

1. The **Buddhist school** neglects the training of the body in favor of the training of the mind and seeks lucidity before anything else.

2. The **Confucian school** aims to keep the conscience calm and sincere. Indeed, Confucianism is a more philosophical and moral doctrine than a religious one, born from the teachings of Confucius (551 to 479 BC, a disciple of Lao Zu), and based on the practice of virtue (altruism, goodness, wisdom, loyalty, etc.).

These two schools mainly focus on the immobile meditations essential to restore health, with the hope of reaching enlightenment.

3. The most complex **Taoist school** since it combines the physical aspect and the spiritual aspect, seeks longevity by striving to promote both the body (to maintain good health) and the mind (to access the higher stages of spirituality).

4. The **medical school** wants to prolong life and alleviate physical problems. Medical Qi Gong is a particular method of Chinese medicine intended to prevent and cure a dozen diseases that are difficult to treat by conventional medicine. This aspect of Qi Gong uses, above all, physical exercises and moving meditation, which will be used in this investigation.

5. The **school of martial arts**, which seeks to develop the muscular power of the body so that it is apt to defend itself against the attacks of enemies

Despite their particularities, these schools, which translate into hundreds of different styles, classify the practice of Qi Gong into two levels:

**External work** (Wai Dan Qi Gong or external elixir) which, similar to gentle gymnastics complete with massages, mobilizes the energy of a specific part of the body.

The **internal work** (Nei Dan Qi Gong or internal elixir) or immobile Qi Gong, practiced both standing, sitting and lying down, uses the special techniques of breathing and meditation to concentrate energy in the lower abdomen (the "hard" Japanese) and then make it travel through the whole body thanks to the microcosmic or macrocosmic circulation to regularize the activity of the body and mind. These static postures, which must be maintained for a certain time, present some analogies with Indian Hatha Yoga.”

We will use the medical QG was born from the description of the three basic methods

- the Tuna ("exhalation and inspiration) or Taxi (regulation of breathing), a breathing technique that allows expel energy from the body and introduce pure energy to improve the functioning of internal organs
- the An Qiao, or self-massage intended for the circulation of energy
- the Dao Yin (driving) that include the set of physical and respiratory exercises necessary to cure diseases.

Energy medicine such as acupuncture, its therapeutic action is considerable since it ranges from the simple restoration of the correct functioning of the autonomic nervous system by the expulsion of negative Qi and its replacement by pure external Qi, to the total eradication of the causes of pathological problems. serious (in China this degree enjoys hospital treatment).

Maintaining, through specific physical training, an adequate level of the energy received at birth, Qi Gong prevents its waste that leads to various psychosomatic (or somatopsychic) diseases such as permanent fatigue and depression.

Its role is to relax the muscles and the mind to allow the metabolism to recover a state of equilibrium favorable to the vital activities of the respiratory system, the cardiovascular system, the digestive system, the nervous system and the endocrine glands.

a) **Respiratory system**: Thanks to the QG, the pulmonary alveoli during the expiration phase will expel carbon dioxide more completely in order to receive the greatest amount of fresh air.

b) **Cardiovascular system**: By dilating the blood capillaries and by reinforcing the activity of the heart, the QG slows the heart rate (generally to 60-70 beats per minute), increasing the lumen of blood received and subsequently expelled by the heart. Blood pressure is likely to increase or decrease depending on the area of the body we are concentrating on: it decreases when consciousness moves towards the lower part of the body (feet abdomen) and increases when it passes to the upper part (head).
c) **Digestive system:** The diaphragm, whose amplitude is greatly increased by regular practice, massages the stomach, intestines, liver and gallbladder, as well as the pancreas and squeezes the blood deposited in these organs, causing an increase in volume. Gastric juice and intestinal peristalsis is activated.

d) **Nervous system:** The QG reduces the tension of the cerebral cortex, which translates, in the electroencephalographic examination, into an increase in alpha waves that manifest in the low frequency. This cortical relief contributes to the regularization of visceral functions.

e) **Endocrine glands:** Consequently, a QG practitioner has a lower oxygen consumption by 16% than a normal individual, while the metabolism of serotonin is 2 to 3 times higher and that of adrenaline only represents 60% that corresponding to the non-practicing individual.

### III. INVESTIGATION METHODOLOGY

A non-experimental cross-sectional study with a comparative descriptive scope was carried out to measure and compare variables and categories of academic stress of the participants. The already validated scale of academic stressors was used (Cabanach, Souto-Gestal and Franco (2016)). It consists of 54 items and is used in university students, the responses are Likert type of five points (1=never, 2=almost never, 3=sometimes, 4=almost always and always=5).

**Objective:** Intervene in the reduction of stress, as well as in the improvement of cognitive aspects through the practice of QG.

#### Results before QG practice

The study was carried out with a sample of 76 2nd year students. Semester of the Lic. AHR of the UNEVE, with a sampling that has respected the natural grouping by courses of the students with voluntary participation. The final sample was made up of 60 women (79%) and 16 men (21%) between the ages of 18 and 66, with a mean age of 31. In order to eliminate stimulating factors of academic stress, well documented in previous research, as those associated with the process of adaptation to the University and with the anxiety present in evaluation periods, among the participants there are no new students nor has the information been collected in times of preparation and taking exams.

Students report feeling stress in the form of overwhelm, due to the excessive and varied demands that teachers make of them, and due to the large amount of information that they are provided in class, stating that they frequently have this feeling.

**Students feel stress in the form of symptoms such as headaches and muscle aches due to the results they obtain in exams and the ways teachers convey these results to the groups.**

**Intervention in public:** the impact that the student has when carrying out activities in public (going to the blackboard, speaking aloud, presenting in class, among others) is valued. Being these frequently actions that cause them stress.

**Results after the application of QG.**

10 sessions were held with a total of 60 constant students of which the following changes were observed.

<table>
<thead>
<tr>
<th>Symptoms that decreased with the practice of Qi Gong</th>
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<tbody>
<tr>
<td>Headache</td>
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<tr>
<td>----------</td>
</tr>
<tr>
<td>always</td>
</tr>
<tr>
<td>almost always</td>
</tr>
<tr>
<td>rarely</td>
</tr>
<tr>
<td>Never</td>
</tr>
<tr>
<td>some times</td>
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Cognitive aspects were evaluated and we obtained that the QG helps the educational and learning process, as well as the perception of work and educational dynamics. As we observe in the following graph, we see how the perception of never improves and rarely what tells us that the practice of QG improves, the perception and the sensation of overload of work, this is due to the fact that it generates relaxation and better oxygenation.

The last scenario was that cognitive aspects such as perception, memory, concentration improved. They are represented in the way in which the students reported the improvement in percentages, so the process that improved the most was concentration.

REFERENCES


Duarte et al. / Qi Gong as a Teaching Instrument to Reduce Academic Stress


