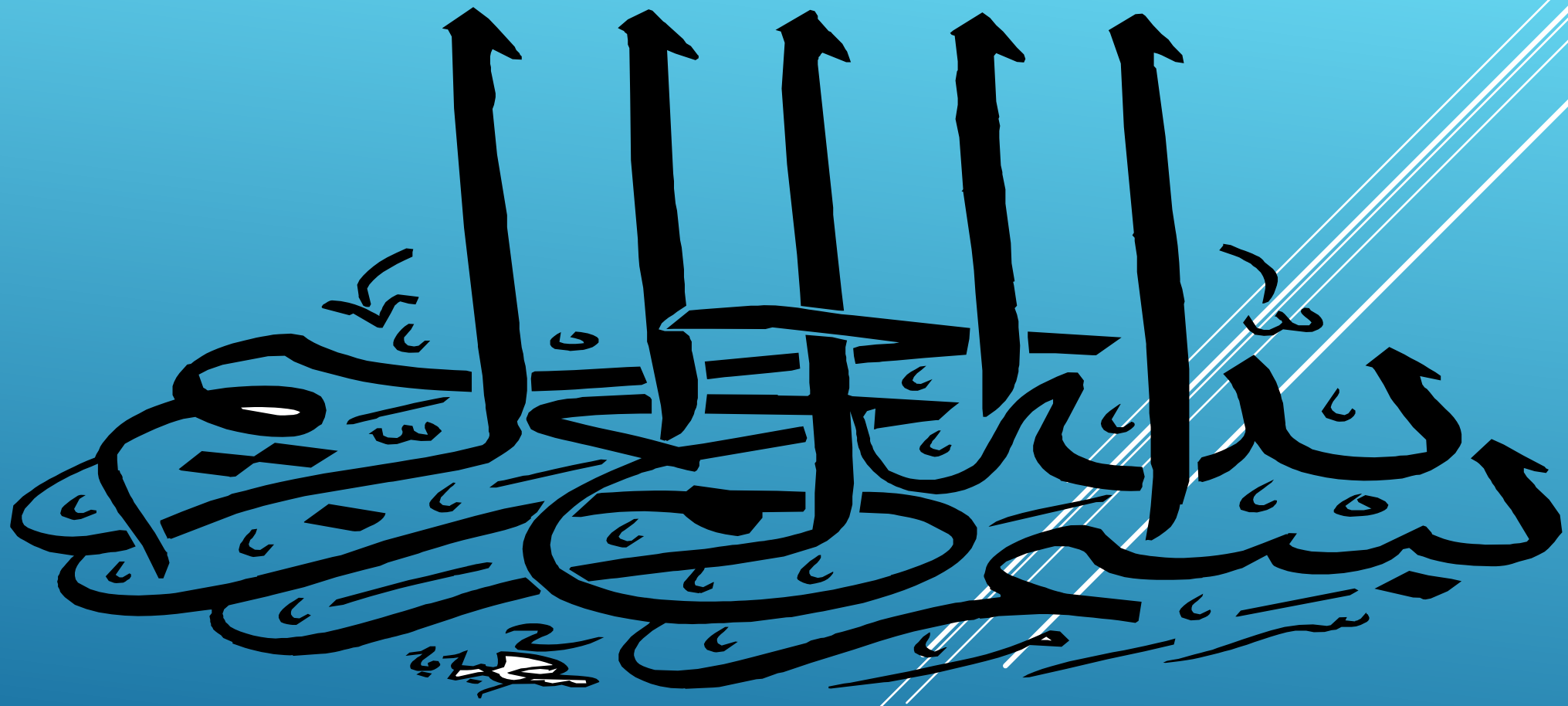
بسم الله الرحمن الرحيم

EFFECT OF PRANAYAMA TRAINNING ON VENTILATORY FUNCTIONS IN BRONCHIAL ASTHMATIC PATIENTS

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INTRODUTION

- Asthma is defined as a chronic inflammatory disorder of the airways, which manifests itself as recurrent episodes of wheezing, breathlessness, chest tightness and cough.

- Asthma is a disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to another. This condition is due to inflammation of air passages in the lungs and affection sensitivity of the nerve endings in the airways so they become easily irritated. In an attack, the lining of the passages swell causing the airways to narrow reducing the flow of air in and out of the lungs

- Pranayama is a ventilatory function improving technique. Prana (life force) and yama (control), is art of controlled breathing. During breathing by pranayama, deep inhalation (purak) stimulates the respiratory system and fills the lungs with fresh air. Retention of air (kumbhaka) raises the internal temperature and plays an important role in increasing the absorption of oxygen.

- Prana is the dynamic principle within everything. Everyone is born with a certain quantum of prana, but the quantity and quality change continuously, as one goes through life. Positive thoughts, higher feelings and yogic practices generate higher levels of prana. Body is fuelled by the chakras, or psychic centres, which are high-powered points of energy in the body. They receive and store the prana, and act as transformers to step down the level of energy, so that it can be used by the different organs and parts of the body.

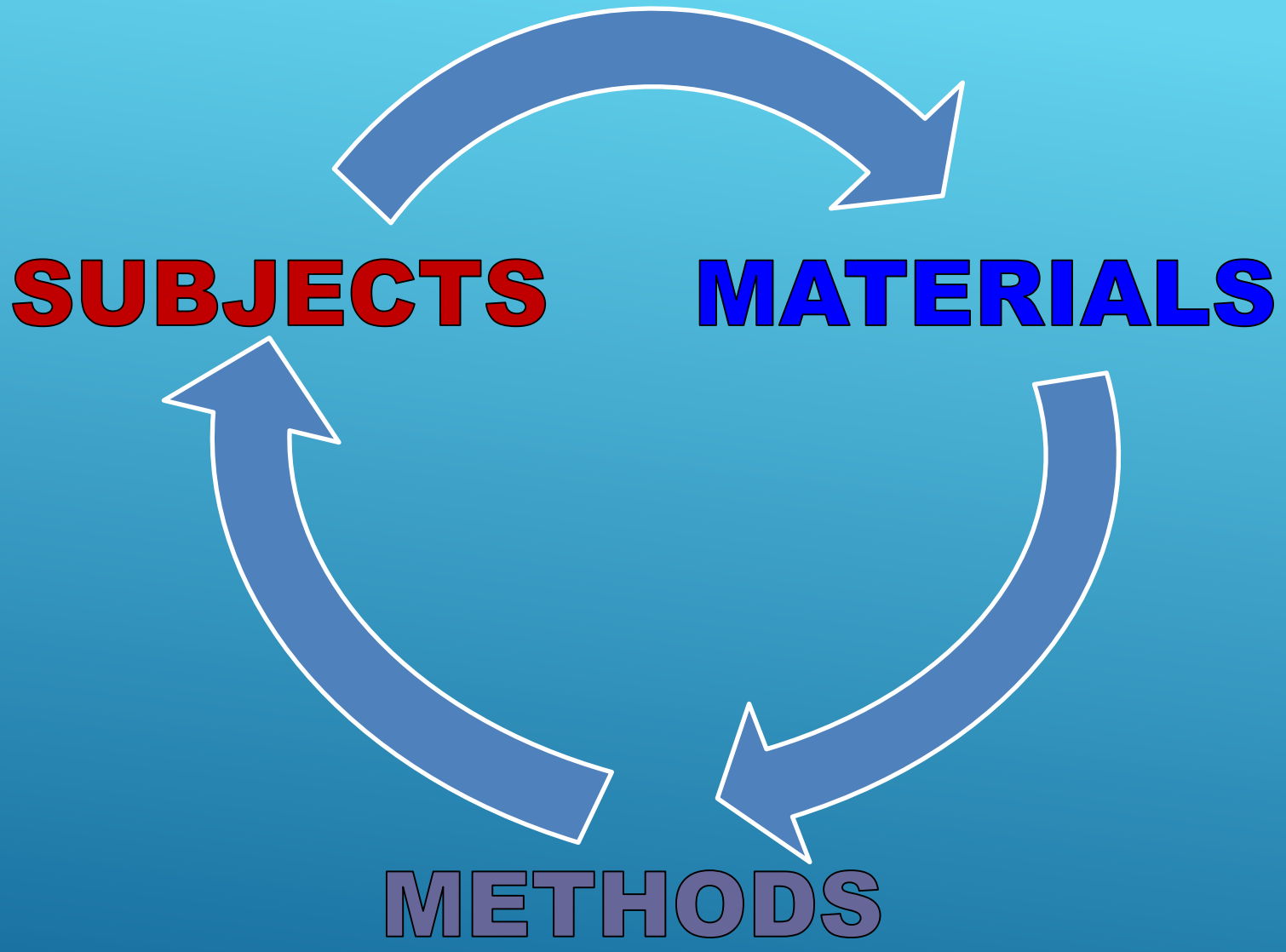
- Pranayama is the first step towards re-orienting and improving the functioning of mind and body by learning to utilize the air we breathe. Pranayama implies correct breathing and control over prana. The cranial and spinal nerves spread throughout the body. These nerves send out and send in to the brain pain and motor impulses. Prana flows throughout these pathways. It also flows through all the nadis, or energetic pathways.

- Nadis means channels . These are astral nerve channels which are beyond the physical body that regulate various functions of the body. Fourteen nadis are considered important, and only six of them are the most important of all. They are called the ida, pingala, sushumna, brahmani, chitrana, and the vijnana

- Ujjayi is one of the most important simplest pranayamas. It is practised by contracting the glottis and breathing through the throat. When done correctly, ujjayi breathing sounds like a cat purring or a baby snoring.
- Ujjayi pranayama exercise enhances the ventilation of the lungs, removes secretions, calms the nerves and fills the body with vitality. Inhalation and exhalation in Ujjayi are slow and deep.

PURPOSE OF THE STUDY

This study has been designed to estimate the effect of ujjayi pranayama breathing on ventilatory functions in mild bronchial asthmatic patients.


SUBJECTS
MATERIALS
METHODS

- **Subject selection**
- Forty patients (volunteers) of both sexes 25 men and 15 women participated in this study. All of them suffered from controlled bronchial asthma for at least 8 years,
- Age ranged between 30 to 40 years old
- Body mass index ranged from 25to 29.9 Kg/m^2
- Patient,s FEV_1/FVC ranged from 60 to 80% of predicted value.

THE STUDY DESIGNE

Group (A):

The study group included 20 asthmatic patients (8 women and 12 men) who were submitted to medical treatment, diaphragmatic breathing exercises and Ujjayi pranayama yoga training with mild diet instructions for two months (three sessions per week).

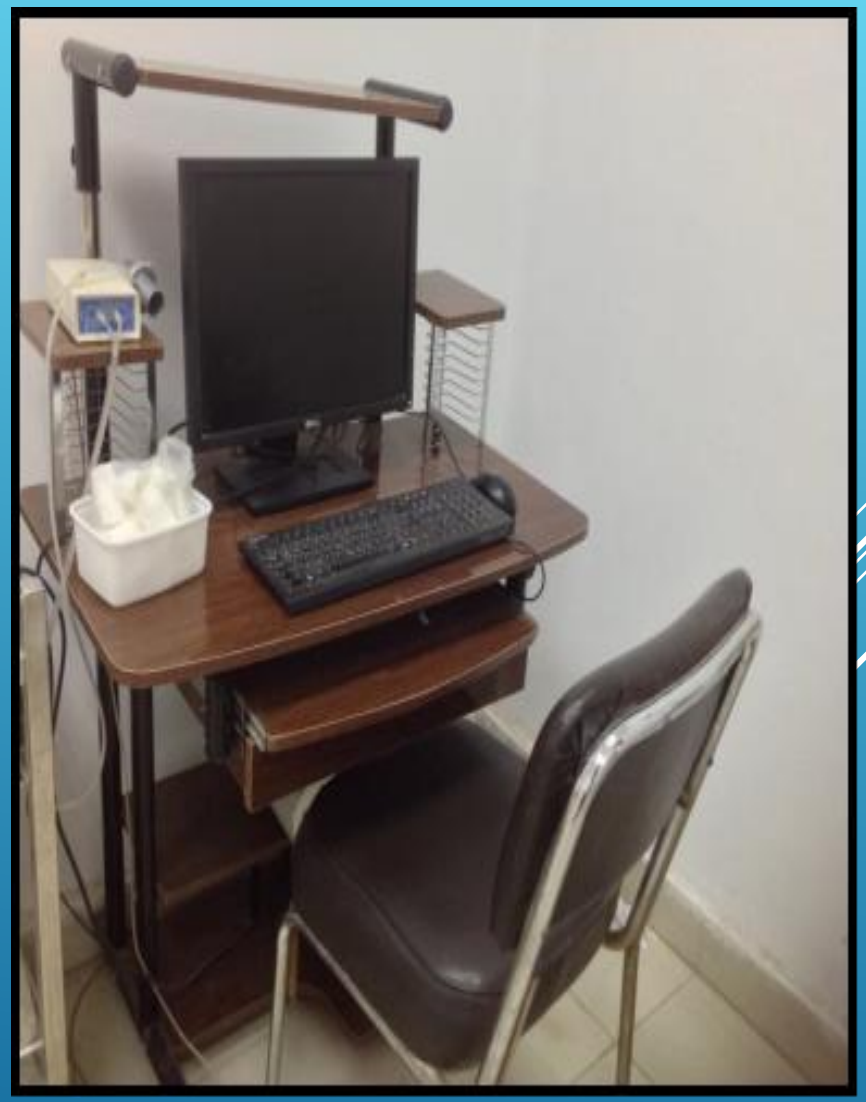
Group (B):

Included 20 asthmatic patients (7 women and 13 men) they received the medical treatment with diaphragmatic breathing exercise with mild diet instructions only for two months (three sessions per week).

Instrumentations

1- SPIROMETER

VENTILATORY FUNCTION TEST INSTRUMENT WITH DISPOSABLE MOUTH PIECE .



2-HEIGHT AND WEIGHT SCALE:

USED TO MEASURE THE HEIGHT AND WEIGHT OF THE PATIENTS TO CALCULATE BMI.

THERAPEUTIC PROCEDURES

DIAPHRAGMATIC BREATHING EXERCISE

Patient sit comfortably, with his/her knees bent, shoulders, head and neck are relaxed, Place one hand on upper chest and the other just below rib cage. This will allow him/her to feel diaphragm move as he/she breathe.

Patient breathe in slowly through nose so that stomach moves out against hand. The other hand on chest should remain as still as possible.

Then patient tighten stomach muscles, letting them fall inward as he/she exhale through pursed lips. The hand on his/her upper chest must remain as still as possible .

UJJAYI PRANAYAMA

Patient Sat in any comfortable meditation position (sitting position was the most comfortable for all patients) Close the eyes and relax the whole body.

Take the awareness to the breath in the nostrils and allow the breathing to become calm and rhythmic.

After some time, when they got the awareness to their breath they were instructed to transfer the awareness to the throat.

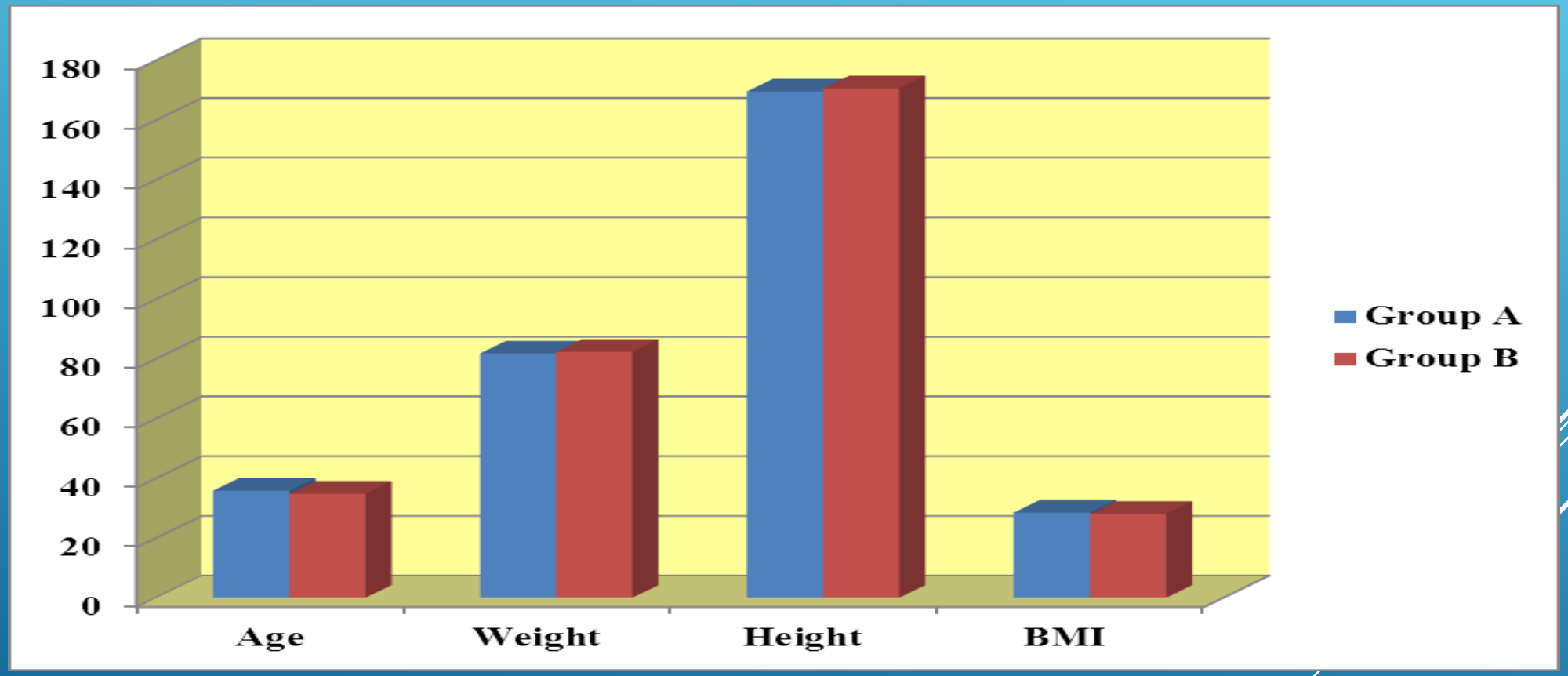
Feel or imagine that the breath was being drawn in and out through the throat and not through the nostrils, as if it was taking place through a small hole in the throat.

As the breathing became slower and deeper, gently contract the glottis, so that a soft snoring sound, like the breathing of a sleeping baby was produced in the throat. When practised correctly, there will be a spontaneous contraction of the abdomen.

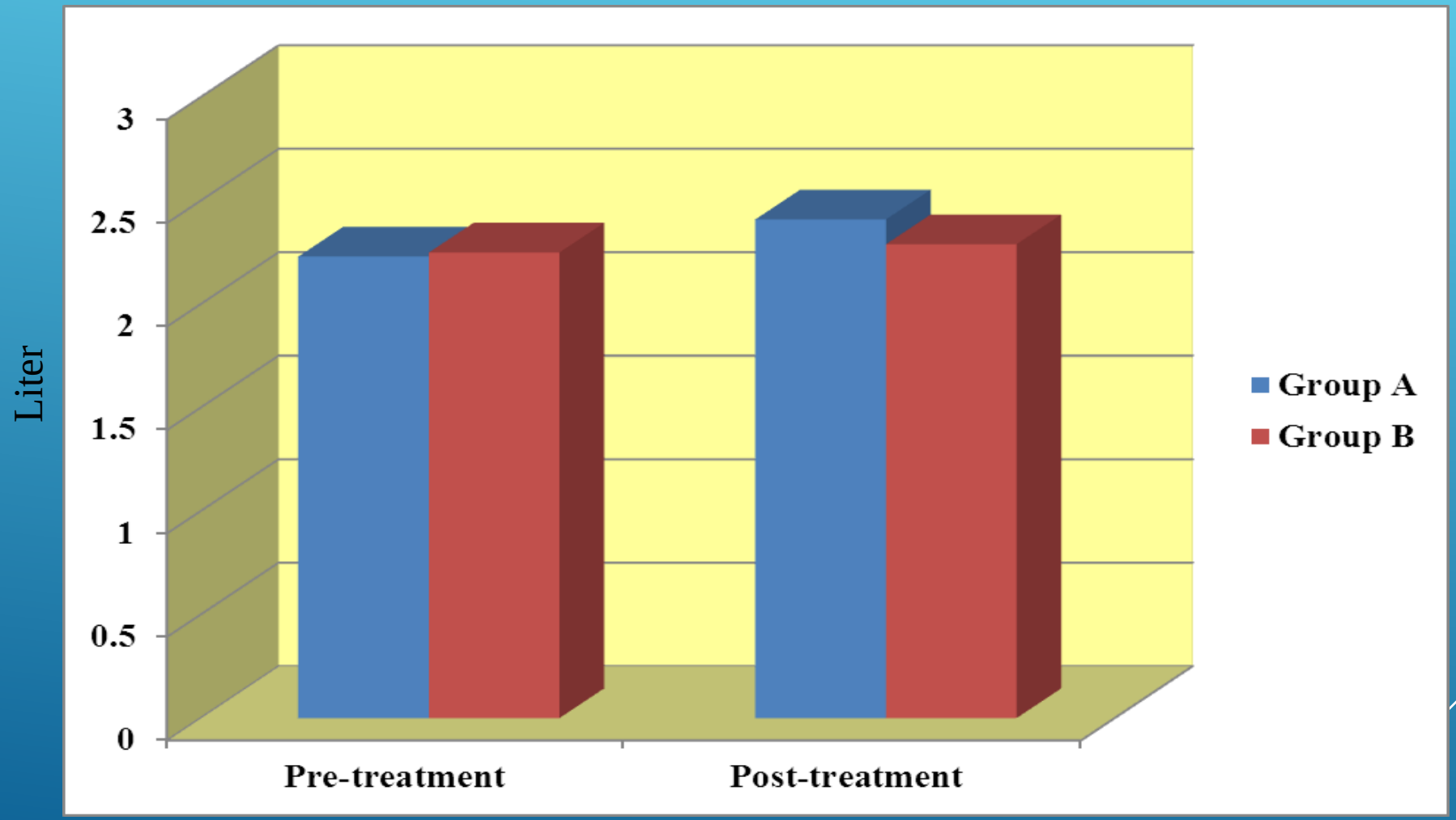
Both inhalation and exhalation should be long, deep and controlled. Relax the face as much as possible. Do not contract the throat too strongly. The contraction should be slight and applied continuously throughout the practice. The sound of the breath should be audiable.

RESULTS

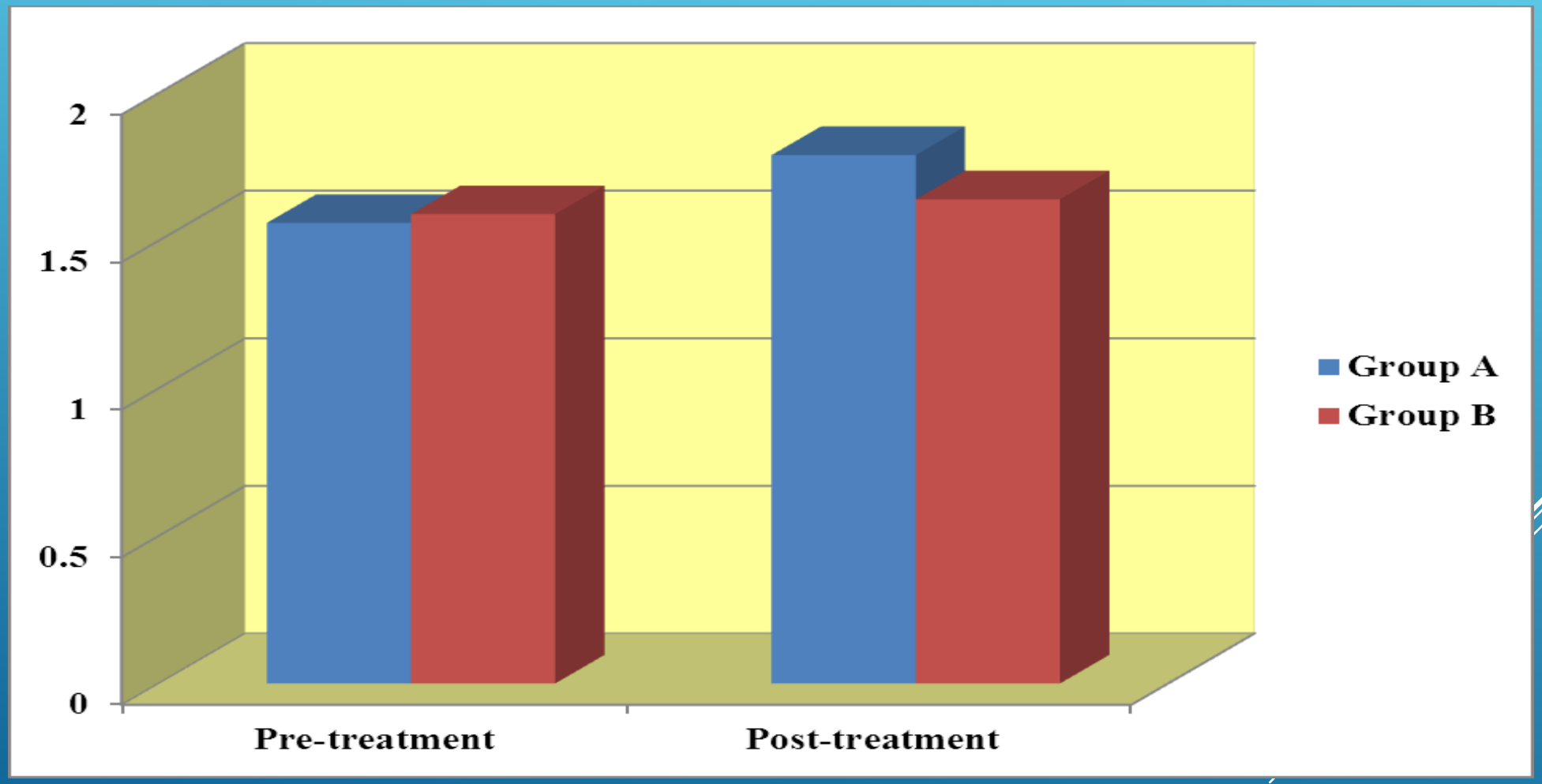
- **Comparative analysis of patients demographic data between group A and B:**



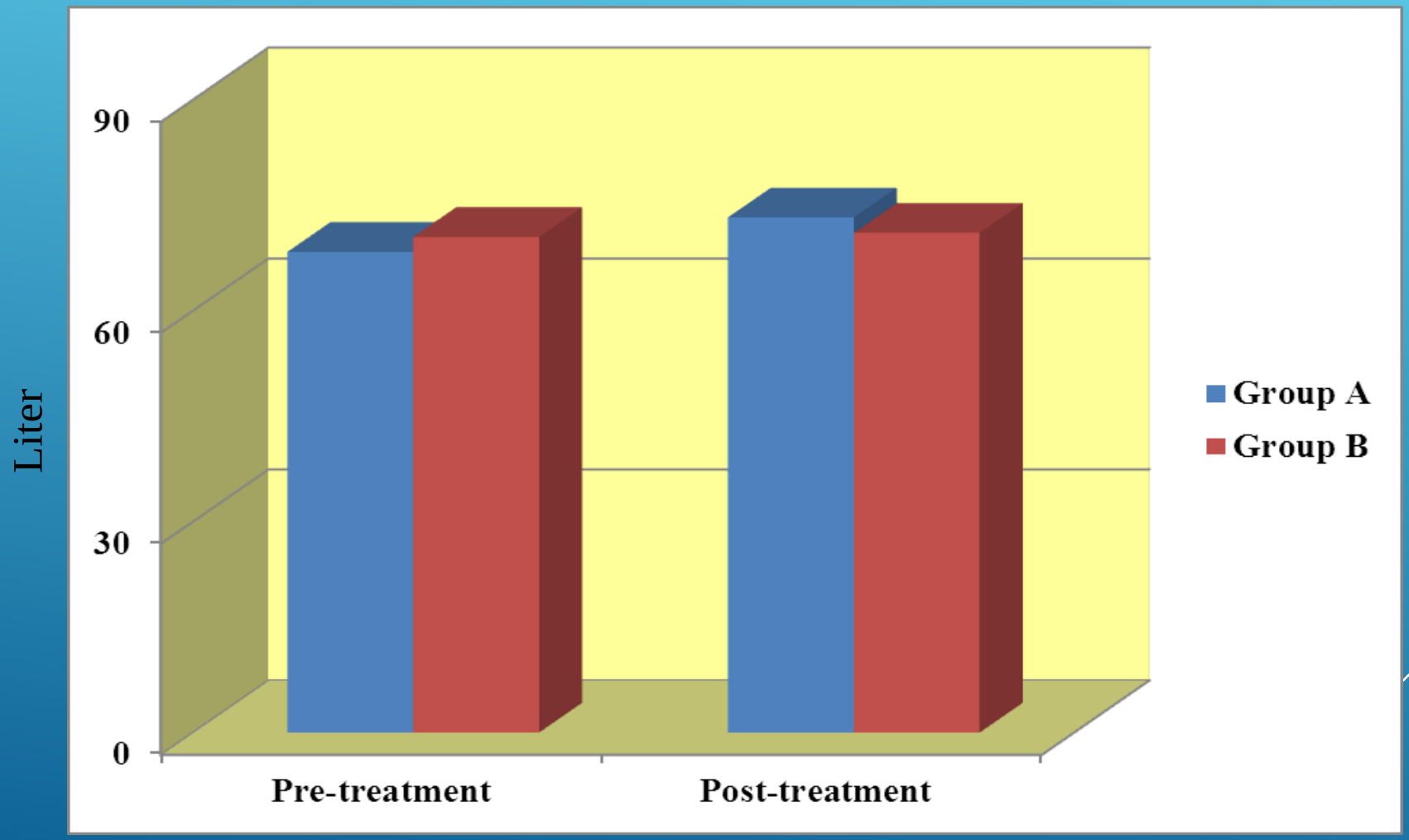
Comparative analysis of FVC between group A and B:



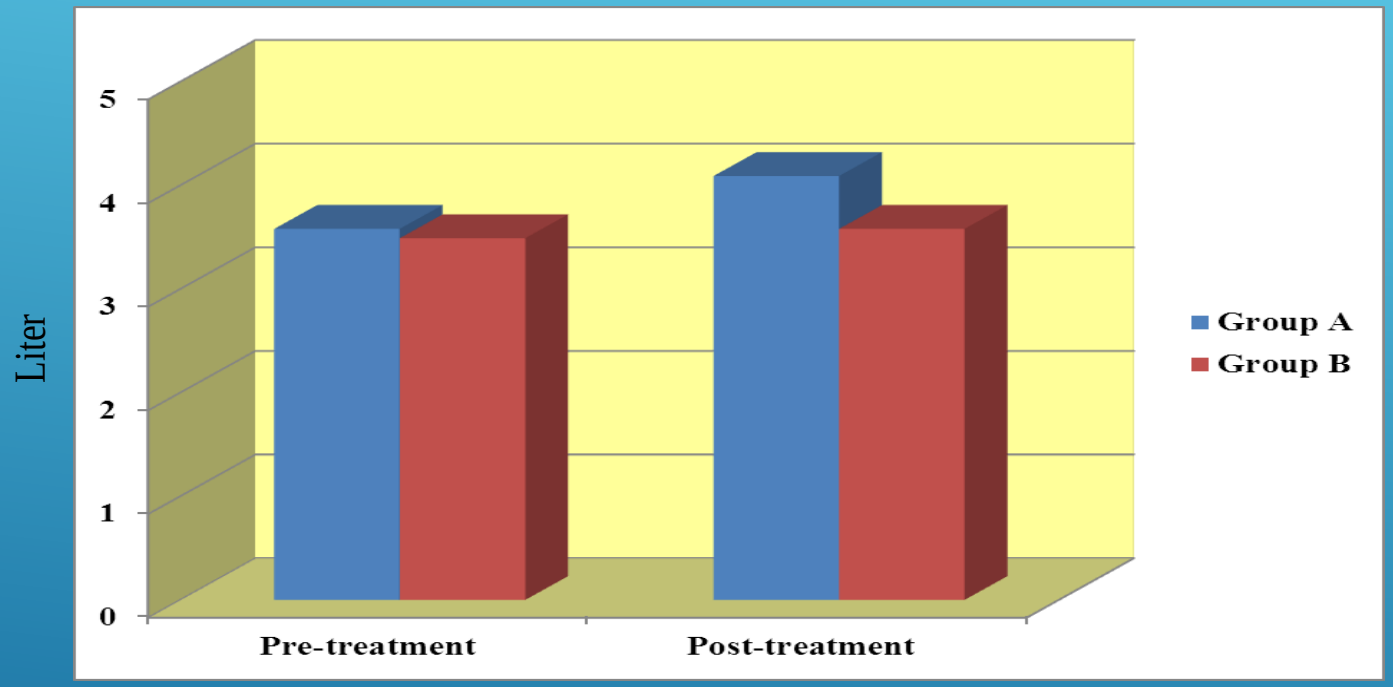
- **Comparative analysis of FEV1 between group A and B:**



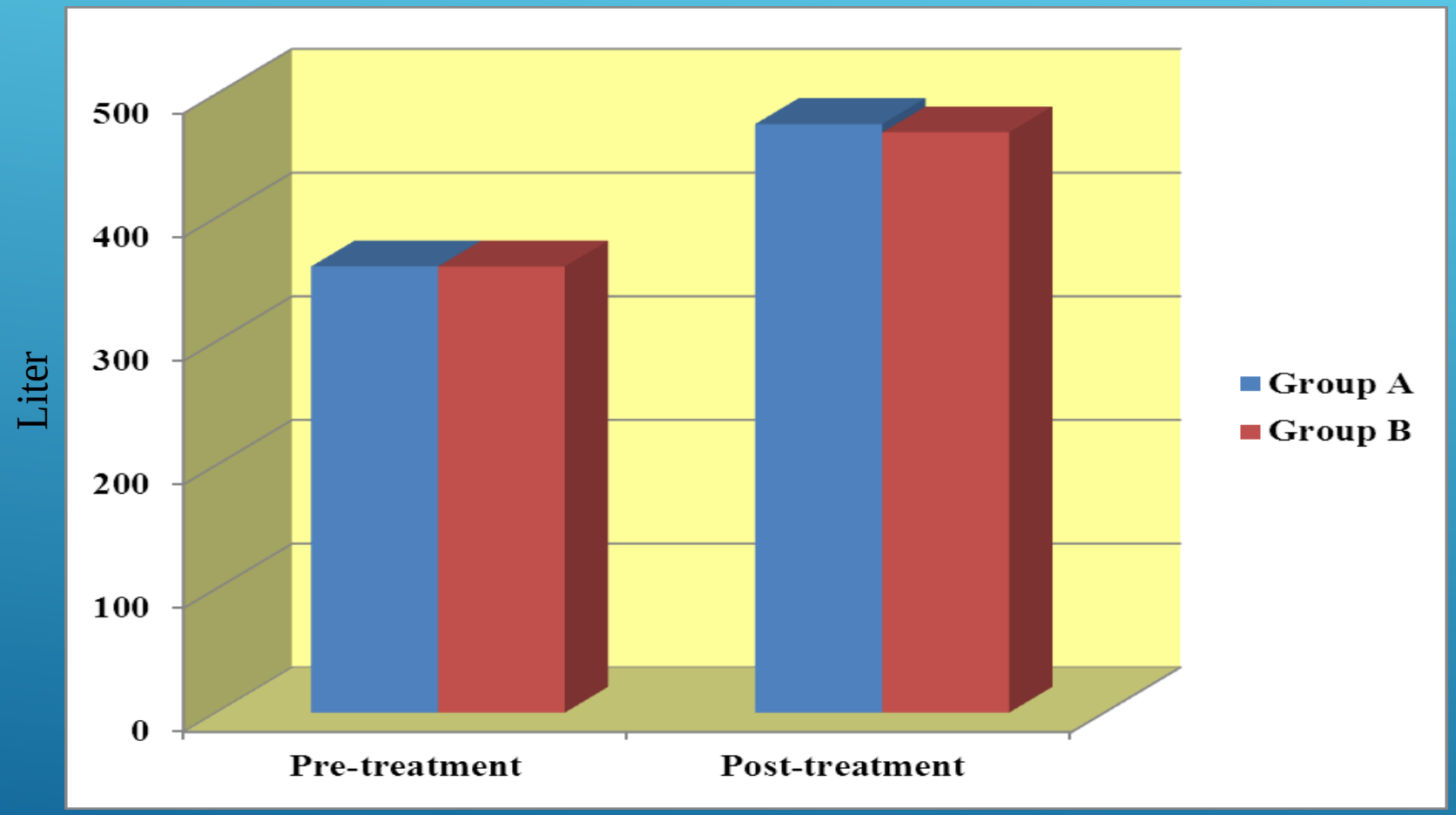
- **Comparative analysis of FEV_1/FVC between group A and B:**



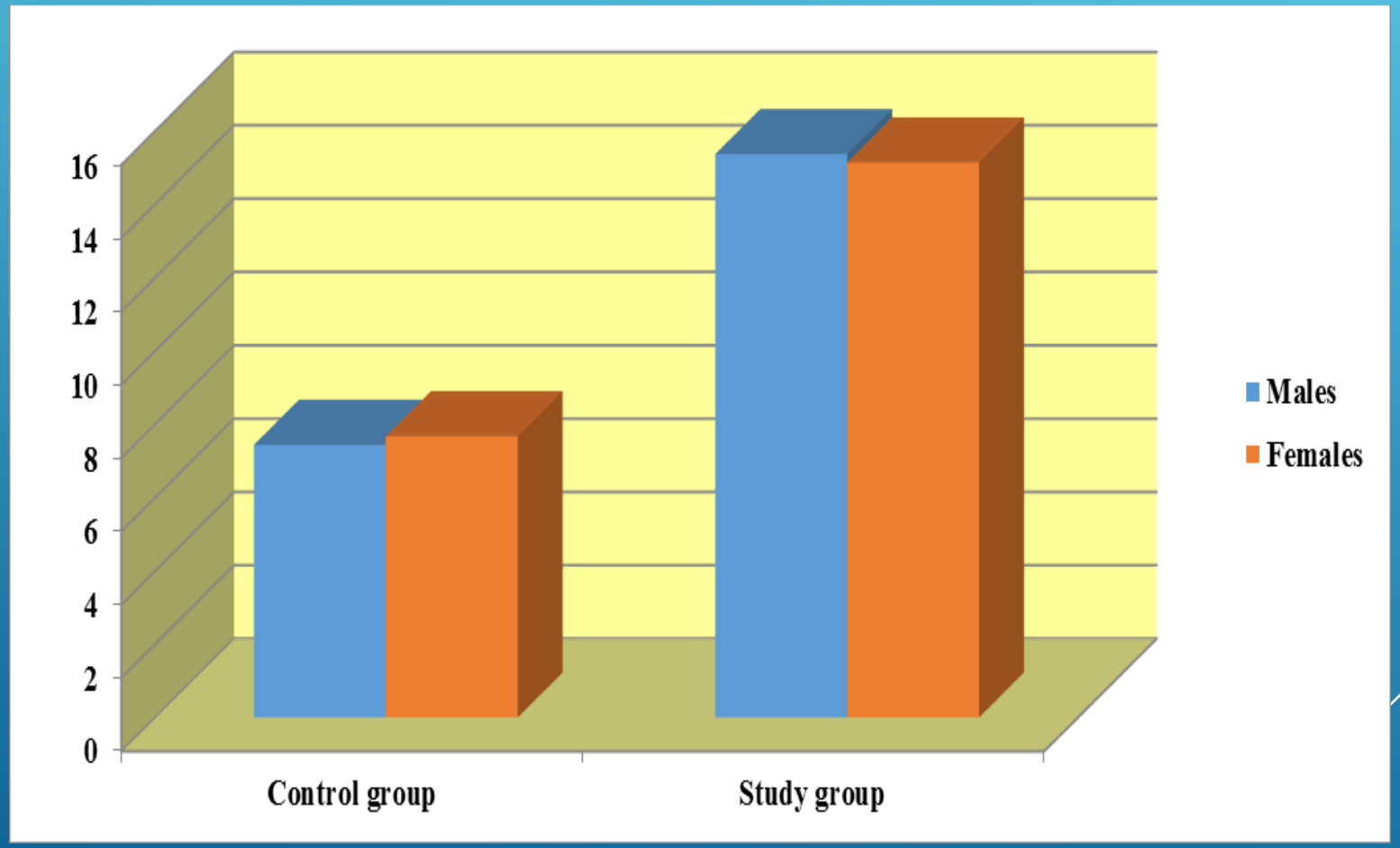
- **Comparative analysis of PEF between group A and B:**



Comparative analysis of 6-min walking between group A and B:



- **Percentage of improvement for males and females in control group and study group**



SUMMARY AND CONCLUSION

- This study was conducted to determine the effect of pranayama on ventilatory functions of mild asthmatic patients.

- The results of the present study found that there was significant improvement in all ventilatory functions as well as improvement in 6-min walk test in patients who performed ujjayi pranayama with diaphragmatic breathing with their medical treatment than those who perform diaphragmatic only .

Recommendation

- The result of this study considered the following recommendations:
- This study suggested that, Ujjayi Pranayama has a good effect on ventilatory functions of mild asthmatic patients so apply it in all Egyptian hospitals.
- Further studies may include larger number in each group, and for longer duration.
- Determine effect of Bhastrika Pranayama on ventilatory functions of asthmatic patients
- Determine effects of different types of yoga on ventilatory functions in normal subjects and patients.
- Detect effect of different types of yoga on chronic obstructive pulmonary diseases.

Thank you