

Effect of Buteyko Breathing Technique on Asthma Control Among Children

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Abstract

A quasi experimental study to assess the effect of Buteyko breathing technique on asthma control among children at selected hospital, Thrissur. The objective of the study was to assess the score of Asthma control among children in experimental and comparison group, evaluate the effect of Buteyko breathing technique on asthma control in experimental group and associate the score of asthma control among children with their selected socio demographic variable. Roy's adaptation model was used as the conceptual framework. Pre test post test design was adapted to assess the effect of Buteyko breathing technique on asthma control and purposive sampling technique was used to select 60 children in the age group of 4-11 years (30 in experimental and 30 in comparison group) who fulfilled the inclusion and exclusion criteria from out-patient and in-patient department of Government General Hospital, Thrissur. The tool consists of semi structured questionnaire to assess the demographic variables of children and their parents. Childhood asthma control test was used as a tool to evaluate the effectiveness of Buteyko breathing technique in pre and post test level of asthma control. Reliability and validity of the tool was established. The pilot study was done for 6 subjects and found to be feasible. The main study was conducted from 2nd February to 3rd March 2019. The comparative study findings revealed that the calculated 't' value of asthma control in both group was 7.22, whereas the table value t was 2.390 at 0.001 level of significance. The investigator analyzed the association of selected demographic variables with pre test score of asthma control. Among 12 selected demographic variables socioeconomic status of the child had an association with pre test score.

Keywords: Buteyko breathing technique; Asthma control; Children; Childhood asthma control test.

Introduction

Asthma is a common chronic inflammatory disease of the airway that affects people of all age groups and it imposes a substantial burden on children, their families, and the community. The increasing prevalence of asthma is a global phenomenon. Asthma causes limitations in the daily activities, lack of school and work days, lung function impairment, reduced quality of life, and an adverse socioeconomic

burden. There is no cure for asthma but the symptoms can be prevented by avoiding triggers, such as allergens and irritants. Non-pharmacological approaches are important aspects of asthma management. These approaches are used in combination with medications. Buteyko Breathing Technique (BBT) is a form of complimentary or alternative physical therapy containing a set of simple breathing exercises that proposes chronic breathing

retraining as a treatment for asthma as well as for other conditions. It is a simple set of breathing exercises that helps in reversing hyperventilation and reducing symptoms in asthma, and other breathing disorder that focuses on nasal breathing, breath holding and relaxation⁸. Based on the above facts the investigator has taken an attempt to study the effectiveness of Buteyko breathing technique as a simple, easy way on reduction of asthma symptoms among asthmatic school children.

Statement of the problem

A quasi experimental study to assess the effect of Buteyko breathing technique on asthma control among children in selected hospital, Thrissur.

Objectives

- Assess the score of Asthma control among children in comparison and experimental group.
- Evaluate the effect of Buteyko breathing technique on asthma control in experimental group.
- Associate the score of asthma control among children with their selected socio demographic variable.

Research Methodology

- Research Approach: Quantitative approach.
- Research Design: Quasi experimental pretest - posttest control group design.
- Variables: Independent variable: Buteyko breathing Technique.
- Dependent variable: Asthma control among children.
- Setting: Government General hospital, Thrissur
- Population Target population: Children diagnosed with asthma.
- Accessible population: Children attending OP and IP department of selected hospital with asthma.
- Sample: Children of both gender and belongs to the age group of 4 to 11 years with asthma
- Sampling Technique: Purposive sampling
- Sample Size: A total of 60 children will be selected out of which 30 in experimental group and 30 in the comparison group.

Tool/Instruments

Childhood Asthma Control Test was used as a valid tool to collect data for this study.

The tool constructed for the study has two parts

Section A: Assessment of demographic Variables.

Tool 1 is a structured questionnaire for child and it consist of age, sex, weight, area of residence, duration of illness, recurrence and family history of asthma.

Tool 2 is a structured questionnaire for the parent and it assessed the age, education, occupation and socio economic status of the parent.

Section B: Childhood Asthma Control Test

The test helps quickly to assess a child's level of asthma control over 4 weeks just prior to the test and assigns a numerical score. The five questions that form the test are simple and check for the frequency and severity of symptoms, their impact on daily life and medication use. Total score is 27.

Intervention: Video assisted teaching and demonstration were provided to the child and the parent in the experimental group on Buteyko Breathing technique. They have instructed to practice the techniques for 4 Weeks twice a day, 12-15 minutes at morning and evening. The group recieved a pamphlet on steps of Buteyko Breathing technique and an activity log as a guide to practice.

Technique: Personal and telephonic interview.

Results

In this study, in regard to the age of the children, 14(46.67%) of the subjects in the experimental group belonged to 4 -6 years of age, 9(30%) children were in the age group of 6-8 years of age. Children of 8-11 years of age were 7(23.3%). In comparison group 15(50%) of the children belonged to 6-8 years of age and 12(40%) of them were in 4 -6 years of age and only 3 (10%) of the subjects were having 8-11 years of age.

The study consists of more male children, than female children, experimental group 17(56.67%) and in the comparison group 16(53.3%) were males. In reference to body weight 28(93.30%) of each group were appropriate for the age in the experimental group and 26(86.67%) in the comparison group. In experimental group 2(6.67%), 3(10%) in the comparison group were malnourished and only 1(3.33%) subject in the comparison group was found to be obese.

In both experimental and comparison groups 24(80%) of the subjects were living in the urban area and the rest of them were from the rural area. In experimental group, 14(46.67%) of the subjects were having a one-year duration of illness, 12(40%) were having less than one year of illness and only 4(13.3%) were suffering from asthma for more than three years. In the comparison group, both the categories 8(26.67%) were having less than one-year illness duration and more than three years of illness duration.

In the experimental and comparison group 20(66.67%) were not taking any medication for asthma and 7(23.3%) of subjects in the experimental group and 10(33.3%) in the comparison group were using inhalers. Only 3(10%) of the experimental group were taking bronchodilators too. Considering the recurrence of asthma, 23(76.6%) of the subjects in the experimental and comparison group were having twice the recurrence and the rest of them were having more than thrice of recurrence in a year. The study includes 24 (80%) in the experimental group were having a family history of asthma, and it is almost the same in the comparison group that is 26 (86.67%).

A paired t-test was used to compare the post-test score of asthma control in the experimental and comparison group. The pre-test score was 15.72 ± 3.087 and the post-test score was 19.15 ± 1.538 . This showed that the mean score of the post-test in the experimental group was higher than the pre-test score. The calculated *t'* value was 10.726 where the table value was 3.2342 at 0.01 level of significance. As the obtained value was higher than the table value, it indicates that there is a significant difference in the control of asthma among children in the experimental and comparison group. So that there is a significant difference in the score of Asthma control between experimental and comparison group after the intervention. Hence the research hypothesis stated "there is a significant difference in the score of asthma control between experimental and comparison group after intervention" was accepted.

The investigator analyzed the association of control of asthma with selected demographic variables using the Chi-square test. Results revealed that out of 12 demographic variables, socio economic status had an association with the control of pre-test score of asthma. The number of subjects who were suffering with uncontrolled asthma was higher in lower socio economic class that is 40(66.67%) compared with middle class of 16 (26.67%). Thus there was a significant association between socio-economic status with the pre-test score of asthma.

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