

A Study to Assess the Knowledge Regarding Diaphragmatic Breathing Exercises Among Bronchial Asthma Patients Admitted in Medical Wards of HSK Hospital at Bagalkot with a View to Develop an Informational Guidesheet

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Abstract

Original Research Article

Background: Asthma is an incurable disease condition. Bronchial asthma is a chronic inflammatory disorder of the airways associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing particularly at night or in the early morning. The management of bronchial asthma can be both pharmacological and non-pharmacological. Hence the researcher developed an Diaphragmatic breathing exercises among bronchial asthma patients. The researcher interested to conduct an non experimental study with an aim towards Diaphragmatic breathing exercises among bronchial asthma patients. **Objectives:** 1) To assess the pre-test knowledge regarding diaphragmatic breathing exercises among bronchial asthma patients. 2) To find out the association between knowledge and selected demographic variables. **Methodology:** A quantitative descriptive research design with sample 60 Bronchial asthma patients were selected by non-probability convenience sampling technique. Data were collected using a Structured questionnaire and data analysed by using descriptive and inferential statistics. **Results:** Therefore, the research hypothesis H2 "There will be significant association between the level of knowledge and selected socio-demographic variables" as stated by the investigator earlier was rejected in the case of demographic variable age, gender, and duration of illness and accepted in the case of other socio-demographic variables such as, educational status. **Conclusion:** The study concluded that bronchial asthma patients have inadequate to moderate knowledge regarding diaphragmatic breathing exercise. Educational intervention such as informational guide sheet are essential to improve patient awareness and self-management.

Keywords: Assess, Knowledge, Asthma patients, Informational guide sheet.

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INTRODUCTION

The respiratory system (also respiratory apparatus, ventilatory system) is a biological system consisting of specific organs and structures used for gas exchange. The tract is divided into an upper and a lower respiratory tract. The upper tract includes the nose, nasal cavities, sinuses, pharynx and the part of the larynx above the vocal folds. The lower tract includes the lower part of the larynx, the trachea, bronchi, bronchioles and the alveoli. Disorders of the respiratory system can be classified into several general groups: Airway obstructive conditions (e.g., emphysema, bronchitis, asthma), Pulmonary restrictive conditions (e.g., fibrosis, sarcoidosis, alveolar damage, pleural effusion), Vascular diseases (e.g., pulmonary edema, pulmonary embolism, pulmonary hypertension), Infectious, environmental and other "diseases" (e.g., pneumonia, tuberculosis,

asbestosis, particulate pollutants), Primary cancers (e.g. bronchial carcinoma, mesothelioma, Secondary cancers (e.g. cancers that originated elsewhere in the body, but have seeded themselves in the lungs), Insufficient surfactant (e.g. respiratory distress syndrome in pre-term babies) [1]. Asthma is an incurable disease, but with medical treatment, patients can achieve a full and high quality of life comparable to healthy individuals [2]. Bronchial asthma is a chronic inflammatory disorder of the airways associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing particularly at night or in the early morning [3]. Symptoms include episodes of wheezing, coughing, chest tightness, and shortness of breath. When allergens, pollen, dust, or other particles, are inhaled into the lungs, causing the bronchioles to constrict and produce mucus, which then

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restricts oxygen flow to the alveoli. These may occur a few times a day or a few times per week [4]. The management of bronchial asthma can be divided into pharmacological and non-pharmacological [5]. Breathing is an automatic function of the body that is controlled by the respiratory centre of the brain. When we feel stressed, our breathing rate and pattern changes as part of the 'fight-or-flight response' [6]. Breathing exercises serve many purposes. They can calm nerves and anxiety and improve lung capacity and efficiency for people with chronic (long-term) lung conditions. There are many different breathing exercises, some people use breathing exercises to reduce anxiety while others use them to improve lung capacity and function [7]. Diaphragmatic breathing, abdominal breathing, belly breathing, or deep breathing is a breathing technique that is done by contracting the diaphragm, a muscle located horizontally between the thoracic cavity and abdominal cavity. Air enters the lungs as the diaphragm strongly contracts, but unlike traditional relaxed breathing the intercostal muscles of the chest do minimal work in this process. The belly also expands during this type of breathing to make room for the contraction of the diaphragm. Diaphragmatic breathing offers several benefits including, helping you relax, improving muscle function during exercises and preventing strain., Increasing how much oxygen is in your blood, making it easier for your body to release gas waste from your lungs, reducing blood pressure, Reducing heart rate. At first, practice this exercise for five to 10 minutes about three to four times per day. Gradually increase the amount of time you spend doing this exercise, and perhaps even increase the effort of the exercise by placing a book on your abdomen [8].

MATERIAL AND METHOD

The descriptive study with an aim intended to assess the knowledge regarding diaphragmatic breathing exercises among bronchial asthma patients admitted in medical wards of HSK hospital of Bagalkot.

Study Design: The Descriptive research design was used to assess the knowledge regarding diaphragmatic breathing exercises among bronchial asthma patients.

Setting of the study: The study was conducted in BVVS HSK Hospital & Research center.

Study participants: The Bronchial asthma patients who are admitted in medical wards of BVVS HSK Hospital & Research center bagalkot.

Sample size: The sample size for the present study is 60 Bronchial asthma patients who are admitted in medical ward BVVS HSK Hospital & Research center bagalkot.

Sampling technique: Sampling is the process of selecting a part of the assigned population to represent the entire population. The sampling technique adopted

for this study is non-probability convenience sampling technique.

Instrument:

The tool or instrument is a written device; the researcher uses to collect the data based on the research problem. Researcher has collected adequate material regarding knowledge regarding Bronchial asthma patients from sources like internet, review of literature, journals, articles and discussing with subject experts. Scoring for the present study is, each question has multiple choices of four different answers with one correct option and each correct answer considered one mark and the wrong answer carries zero mark. Reliability of the tool was assessed by using test method, applying Karl's Pearson's formula. In this study the reliability coefficient for knowledge questionnaire was found to be $r=0.8145$ Hence the tool was considered to be reliable.

Description of the tool:

Self-constructed structured questionnaire and standardized intervention scale

Self-constructed structured questionnaire which consists of one part and Knowledge questionnaire of diaphragmatic breathing exercises it consists of one part;

PART I: Socio demographic data of Bronchial asthma patients.

PART II; Knowledge questionnaire of diaphragmatic breathing exercises.

DATA COLLECTION PROCEDURE:

The data collection was Conducted from Bronchial asthma patients who are admitted in the medical ward at BVVS HSK Hospital and Research centre, Bagalkot. Permission was obtained from the medical superintendent of BVVS HSK Hospital before data collection. Written consent was obtained from 60 sample. Bronchial asthma patients were selected on the basis of non-probability convenience sampling technique. Then the investigator did a assessment of knowledge regarding bronchial asthma patients. For assessing the level of knowledge Self constructed structured questionnaire was used.

Socio demographic variables: Age, Gender, Educational status, and Duration of illness,

Statistical analysis:

The obtained data were statistically examined in terms of the objectives of the study using descriptive statistics. A master sheet is prepared with response given by the study participants. Frequencies and percentage was used for the analysis of demographic data. The mean and standard deviation, mean difference and standard deviation difference is used for inferential statistics. The chi square test was used to determine association between the level of knowledge scores and selected

sociodemographic variables of bronchial asthma patients.

Ethical Approval:

A certificate of ethical permission was obtained from ethical committee of the institute and written consent was taken from each participant.

RESULTS

The collected information was organized and presented in three parts: Part I, Part II and Part III.

Part I: Description of socio-demographic variables.

Part II: Assessment of knowledge regarding diaphragmatic breathing exercises among Bronchial asthma patients.

Part III: To find out the Association between knowledge and selected demographic variables

SECTION I: Description of socio-demographic variables.

Table 1: Demographic characteristics of study subjects. N=60

Characteristics	No of respondents	% of respondents
Age group		
18–30	12	20%
31–45	20	33.3%
46–60	18	30%
Above 60	10	16.7%
Gender:		
Male	34	56.7%
Female	26	43.3%
Educational Status:		
literate	10	16.7%
Primary	15	25%
Secondary	20	33.3%
Graduate	15	25%
Duration of Asthma:		
Less than 1 year	14	23.3%
1–5 years	28	46.7%
Above 5 years	18	30%

Description of socio-demographic data:

In Age group, Majority (33.3%) of the subjects were between 31–45years, least (16.7%) between Above 60years, and (30%) rest of the subjects were between 46–60years and In Gender, Majority (56.7%) of the subjects were males and the rest (43.3%) females. above and then (20%) subjects were in the age group of 18–30years respectively. In Educational status Majority (33.3%) of the subjects were belongs to Secondary, while (25%)

Primary, (25%) were not (16.7%) were of illiterate and Graduate. In duration of illness, Majority (46.7%) of the samples were belonged to 1–5 years, and least (23.3%) of the subjects were belongs to Less than 1 year and (30%) rest of the subjects were above 5 years.

SECTION II: Assessment of knowledge regarding diaphragmatic breathing exercises among Bronchial asthma patients.

Table 2: Assessment of overall knowledge regarding diaphragmatic breathing exercises among Bronchial asthma patients N=60

Knowledge level	Score range	frequency	%
Poor	0-5	18	30%
Average	6-10	28	46.7%
Good	11-15	14	23.3%
Total		60	100%

Table show that Majority (46.7%) of Bronchial asthma patients were having average Knowledge, least

(23.3%) of them were having good Knowledge, and Remaining (30%) of them were having poor Knowledge

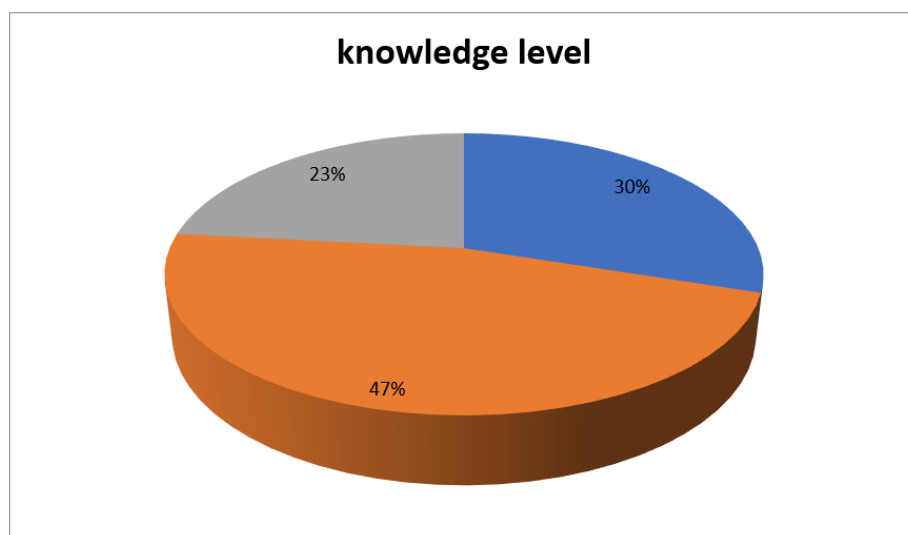


Fig. 1: knowledge levels of participants

Figure: Assessment of overall knowledge regarding diaphragmatic breathing exercises among Bronchial asthma patients.

SECTION III: To find out the Association between knowledge and selected demographic variables N=60

SI NO	Socio demographic variables	DF	Chi-square value	P- value	Association
01	Age	1	0.051	0.8213	Not significant
02	Gender	1	0.011	0.9165	Not significant
03	Educational status	1	4	0.0455*	Significant
04	Duration of illness	1	0.394	0.5302	Not significant

*p<0.05**p<0.01, ***p<0.001

Chi square and Yates correction was calculated to find out the association between knowledge scores of bronchial asthma patients with their socio demographic variables by using contingency table. Therefore, the research hypothesis H2 “There will be significant association between the level of knowledge and selected socio-demographic variables” as stated by the investigator earlier was rejected in the case of demographic variable age, gender, and duration of illness and accepted in the case of other socio-demographic variables such as, educational status.

DISCUSSION

This chapter discusses the main findings of the study and considers them in relation to the results of other studies. The present study was conducted to assess the knowledge regarding diaphragmatic breathing exercises among bronchial asthma patients at HSK hospital of Bagalkot”

To achieve the objectives of the study, descriptive research design was adopted. A sample of 60 bronchial asthma patients was selected using a Non probability convenience sampling technique.

The assessment of the knowledge level of the bronchial asthma patients reveals that 30% of the participants had poor level of knowledge score, 46.7% of the participants had average level of knowledge score

and 23.3% of the participants had good level of knowledge. The results were supported by the study conducted by Ms. Manisha Angelina David, Ms. Pooja Pandey (2025), to assess the effectiveness of structured teaching programme on knowledge regarding breathing exercises and relaxation techniques among asthma.

CONCLUSION

The study concluded that bronchial asthma patients have inadequate to moderate knowledge regarding diaphragmatic breathing exercise. Educational intervention such as informational guide sheet are essential to improve patient awareness and self-management.

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