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A Study to Assess the Respiratory Health Before and After Breathing Exercises Among Traffic Police in Mysore City

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Abstract

Introduction and Objectives: Respiratory health means the respiratory system is healthy and functioning normally. Respiratory functions are maintained by the respiratory system. Breathing is an essential function for the maintenance of optimum oxidation process in the cells and intracellular (endogenous) respiration. [3] The main purpose of breathing exercises is to make the respiratory system function at its best. This automatically improves the circulatory system without which the processes will suffer.[4,6]

Respiratory Health i. e the respiratory functions gets altered among the Traffic Police due to the hazardous pollutants in which they work .[2] In Mysore City I found that no research studies have been performed among the Traffic personnel regarding respiratory health, guided by all these facts I was encouraged to conduct a study among traffic police regarding respiratory health before and after breathing exercises and to compare the mean difference between pre-test and post –test respiratory health parameters in relation to breathing exercises . Find out the association between the selected back ground factors and the mean difference on the respiratory health among Traffic Police in Mysore city.

Methodology: The research approach for this study was experimental approach. The present study was the one group pre-test posttest design. To assess the effectiveness of Breathing Exercises on the Respiratory Health status of Traffic Police. The data was collected from 45 traffic police personnel who were selected using simple random technique at selected Zone of Traffic Police station in Mysore. The Self-administered Structured Questionnaire was used to collect the data. The respiratory health examination using the proper devices were carried out and the breathing exercises were taught using Video – teaching individual check list was given individual check list was given to know about the regularity of performing the breathing exercises for 15 days and the post-test was conducted.

Results: The mean Post –test score was 38.96 (SD 3.30). There was significant improvement in Respiratory Health Status after breathing exercises among Traffic Police, t = -8.734 (p = 0.00). the mean score of pre-test Respiratory rate was lower than the post- test respiratory Rate. The Spirometry mean score were significantly increased in post –test than in pre-test among Traffic Police after breathing exercises, t = -2.60 was significant (p< 0.05). There was significant difference t= -3.70 (p<0.05) in the mean score of pre –test and post –test of PEFR among traffic Police. The history of respiratory illness was

associated with respiratory health status among Traffic Police, t= 0.007($p < 0.05$).

The overall respiratory health status was improved by the breathing exercises among the traffic police. Hence the Breathing exercises are effective to improve and maintain respiratory health.

Conclusion: This study enables us to understand that Traffic police personnel must be encouraged to practice the specified breathing exercises as demonstrated in the video teaching programme. The regular and consistent practice of breathing exercises among the selected Traffic police at Mysore City has improved their respiratory health status.

Keywords: Assess, Respiratory health status, Breathing Exercises, Traffic Police, Selected area.

Introduction

The breath is very precious and its so vital we are alive because we have it. "And the Lord God formed man of dust of the ground and breathed into his nostrils the breath of life and man became a living being" (Genesis 2:7). The breath we take at each moment is the gift of life from God**.** Health is very much essential for every individual to live in this world.

Health has evolved from an individual concern to a worldwide social group. WHO has developed "The Global Plan of Action on Workers' Health (2008-2017)". According to WHO and ILO estimates for the year 2000 there are 2.0 million work-related deaths per year. WHO estimates that there are only 10-15% of workers who have access to a basic standard of occupational health services. [1,2]

Traffic Police personnel are exposed to different health and safety risks in their occupation. The traffic police personnel work among all the major vehicular pollutants for 7-10hrs of duty with limited ventilation and excessive congestion to the respiratory system. As they are exposed to emissions from the vehicles can increase oxidant stress; decrease the levels of antioxidants and nitric oxide. This imbalance in the oxidant and antioxidant system may lead to lung damage and is likely to cause respiratory problems. [2,8]

The health effects of air pollutants are both immediate and delayed. Studies (2001) India indicated that the impact of air pollution on the Traffic police is about 87% on respiratory health affected by the vehicular air pollutants. The major populations affected directly by the vehicular source of air pollutants are the traffic police personnel. The Government General and Chest Hospital, Hyderabad conducted survey in the twin cities Hyderabad and Secunderabad among 800 traffic police constables who were exposed to dust and vehicular pollution. They found that 45% were suffering from the respiratory and non-respiratory health problems.[12]

National Ambient Air Quality Standards define permissible limits for various types of air pollution. The permissible limit for non-industrial are as is — suspended particulate matter 200 micrograms per cubic centimeter, oxides of nitrogen 80 mig/ cc and sulphur dioxide 80 mig/cc. However, according to the survey, suspended particulate matter values ranged from 297 micrograms per cubic centimeter at Chamundipuram to 457 micrograms per cubic centimeter at K.R. Circle. This shows that presently there is an increase in the air pollutants in Mysore city.[8,9,10,11]

Respiratory health means the respiratory system is healthy and functioning normally. Respiratory functions are maintained by the respiratory system. Respiratory system is made up of the organs (lungs) involved in the interchanges of gases (breathing). Breathing is an essential function for the maintenance of optimum oxidation process in the cells and intracellular (endo genous) respiration. [3]

Exercise is the key to the full utilization of the lungs. Breathing exercises means the art of healing aimed to deepen inspiration or expiration or even to alter the rate and rhythm of respiration. The breathing exercises make to use entire lung and the chest muscles actively and help to get the needed amount of the oxygen for normal functioning of the body. Air is a vital component for us to live as air breathed in has oxygen (21%) required to generate energy needed by the cell in the body for chemical reactions in presence of oxygen., the ventilation and gas exchange between the body cells and the atmosphere occurs then the respiratory system is said to be healthy.[3,4]

This can be assessed by using the bio-physical measures. Lung function tests are also called as pulmonary function tests. This evaluates how well our lungs work. Forced Vital Capacity (F V C) is the total amount of air that can forcibly be blown out after full inspiration, F E V_1 is the volume of air that can forcibly blow out in one second, FEV_1 / FVC normal is 75 - 80. The tests determine how much air the lungs can hold, how quickly the air can move in and out of the lungs, and how well the lungs put oxygen into and remove carbon dioxide from blood. The tests can diagnose lung diseases, measure the severity of lung problems. Spirometry means the measuring of breath, its the most common of the Pulmonary Function Tests specifically measuring the measurement of the volume and speed (flow) of air inhaled and exhaled.[3,5]

As the brain, is the body's single largest consumer of oxygen represents only about 2% of the body's weight, it utilizes about 20% of the body's oxygen. The brain is sensitive to hypoxia, without oxygen large numbers of brain cells begin to die. Prolonged hypoxia (e.g., suffocation) results in death. In order to have normal functioning of body one must breathe well, full, deep inspirations of pure air, this fills the lungs and with oxygen purifies the blood. Therefore, paying attention to breathing, and practicing breathing techniques improve lung capacity and overall well-being.[3,5,7]

A comparative study was conducted on air pollution-related morbidity among exposed population. It was assessed the pattern of morbidity in two areas of Delhi, one highly polluted area (HPA) and the other low polluted area (LPA). 640 subjects The mean number of symptoms experienced by subjects of HPA was more as compared to LPA ($P < 0.05$). Frequency of occurrence of symptoms varied with duration of stay in the study area. They found the difference in mean PEFR values among the populations in LPA and HPA were found to be statistically significant ($P < 0.05$).[13]

A study was conducted to assess among 750 adults for intra-urban variability in outdoor air quality and its health risks in West Bengal, India. Ambient air quality along with micrometeorological data was measured in a suburban area, from March 2006 to February 2007 in order to assess the intra-urban variability of air pollutants in different parts of the city. The association between intra-urban variability of air pollution and respiratory diseases were evaluated with logistic regression analyses. Compared with subjects staying 5.0 km away from a main road to those subjects living within 0.5 km and 1.0 km had odds ratios of 1.00 (95% CI, 0.85 to 1.50), 3.57 (95% CI, 3.00 to 3.95), and 3.00 (95% CI, 2.85 to 3.50), respectively for doctor - diagnosed asthma. They concluded that residential exposure to highly trafficked roads is associated with respiratory diseases. [14]

A study was conducted to find the effect of breathing exercises in patients with bronchial asthma of mild to moderate severity. The efficacy of yoga therapy though appreciated. Fifty cases of bronchial asthma (Forced Expiratory Volume) in one second (FEV1) > 70%) were studied for 12 weeks. Patients were allocated to two

groups: group A and group B (control group). Patients in group A were treated with breathing exercises (deep breathing, Brahmari, and Omkar a, etc.) for 20 minutes twice daily for a period of 12 weeks. Subjective assessment, FEV1%, and Peak Expiratory Flow Rate (PEFR) were done in each case initially and after 12 weeks. The main results were After 12 weeks, group A subjects had significant improvement in symptoms, FEV1, and PEFR as compared to group B subjects. Breathing exercises (pranayama), mainly expiratory exercises, improved lung function subjectively and objectively.[15]

A study was conducted to assess the efficacy of pursed-lips breathing: a breathing pattern retraining strategy for dyspnea reduction among 40 subjects of 65 years with COPD. The study aimed to compare 2 programs of prolonging expiratory time (pursed-lips breathing and expiratory muscle training) on dyspnea and functional performance. Changes over time in dyspnea [modified Borg after 6-minute walk distance (6MWD) and Shortness of Breath Questionnaire] and functional performance (Human Activity Profile and physical function scale of Short Form 36-item Health Survey) were assessed with a multilevel modelling procedure. Weekly laboratory visits for training were accompanied by structured verbal, written, and audiovisual instruction. Among 40 subjects with chronic obstructive pulmonary disease age 65 years. No significant Group x Time difference was there for PE max (P = .93).

Significant reductions for the modified Borg scale after 6MWD (P = .05) and physical function (P = .02) from baseline to 12 weeks were only present for pursed-lips breathing. The finding suggested that Pursed-lips breathing provided sustained improvement in exertional dyspnea and physical function.[16]

A medical checkup was conducted among traffic police with Vadodara police in collaboration with Cipla, Dr Manoj Yadav pulmonologist in the four-day free medical check-up for all personnel in the traffic division, specifically for respiratory ailments. Found that about 15 per cent of the personnel in the Vadodara Traffic Department exhibited signs of respiratory ailments and were in need of urgent medical intervention.

The tests included a spirometry test to check lung efficiency, using a specially designed spirometer. Preventive measures had already tried some like pollution masks and pure oxygen inhaling centres. Regular breathing exercises, daily physical workouts and rotation of shifts were recommended to reduce the susceptibility. [17]

Material and method

To accomplish the objectives of the study, one group pre-test post -test design was adopted. The population of the study included Traffic Police and the accessible population was the Traffic Police of the Mysore City, those who hold well with the criteria as mentioned by the researcher.

Thus N, R Traffic zone which included 45 Traffic polices were selected using simple random sampling technique under the Commissioner of Police Mysore. In this study Self- administered structured questionnaire in the local language that is Kannada was used to collect the base line data and data on respiratory health were collected and in the next section the Biophysical measures was collected which were related to the respiratory health.

Structured tool On Respiratory Health consists of a request to the traffic police and a consent form and three sections in it as follows.

Section 1: Demographic Data

This section consists of the items related to personal data regarding age, No. of Years of experience, working

hours, medical checkup, habits, use of protective devices, and history of any respiratory illness.

Section 2: Data on Respiratory health Status

With the expert's consultation and review literature 11 items were developed.

This section consists of the items including the respiratory health history and regarding the respiratory health status. The subjects were asked to identify their present respiratory health. The Scoring of the response from questions 1-9 were as "Frequently" score is 1, "Sometimes" score is 2, "Rarely" score is 3 and "Never" score is 4 and for question 10 and 11the response were scored as score for 1 "Yes" and score 0 for "No". The high score indicates the "good" respiratory health status and low score indicates the "poor" respiratory health status. The total score of this section was 48.

Section 3: Data on Biophysical measures of the Respiratory System

This section consists data regarding Biophysical measures of the respiratory system like the respiratory rate, Blood pressure, Inspiration

Expiration ratio, Spirometry readings and PEFR measures. Here the "normal measures" were given score 1 and "abnormal measures" were given the score 0. The total score of this section was 5.

The simple breathing exercises are many and investigator selected to teach about the Coastal expansion exercise, Pursed lip Breathing and Diaphragmatic Breathing. These Increases the absorption of oxygen, general relaxation and helps to prevent the respiratory health problems.

They Traffic police were expected to practice the exercises namely, 1. Costal Expansion Exercises, 2. Pursed lip breathing Exercises, 3. Diaphrag matic Breathing Exercises. The preparation and the steps for the exercises were recorded in the video C.D. The average time taken for Breathing Exercises was 20 minutes and practiced twice daily for two weeks.

Validity of the Bio physical measures

Blood pressure was measured using the Sphygmo mano meter, Spirometery was assessed manually through the Respiro meter, PEFR was assessed through the Peak flow meter, and all these were compared with other devices of same kind and found that they were giving the valid and true result thus used in the research study by getting the validity of the bio-physical measures.

Test-retest method was used to test the reliability of the Structured questionnaire. The tool was administered (test) to 10 Traffic Police of K. R. Traffic Police station and again had administered the same questionnaire after one week of interval (retest). The reliability was calculated using Karl Pearson's Co-relation Co-efficient "r" which was 0.967 and was found that the tool was highly reliable for this study.

The pilot study was conducted in K. R. Traffic police station, Mysore to test the feasibility and practicability of the tool which was used for the study.

Pre-test was done later after two weeks of interval the Post –test was done. Thus the feasibility of the study was clearly known.

Validating video CD on breathing exercises

The Nursing Experts and Physiotherapists validated the video CD. The appropriate modification of the content was finalized. The video programme was pre-tested among the Traffic Police in K.R Traffic, Mysore for the pilot study.

The average time taken to teach the exercises through the video teaching was about 20 minutes.

The pilot study has proved that, breathing exercises were conducive and acceptable by the traffic police with much interest.

Results

1. Findings on respiratory health before and after breathing exercises Amon Traffic Police in Mysore City.

The mean Post –test score was 38.96 (SD 3.30)**.** There was significant improvement in Respiratory Health Status after breathing exercises among Traffic Police, t = -8.734 (p = 0.00)

2) Findings on mean difference between pre-test and post –test respiratory health parameters in relation to breathing exercises among Traffic Police in Mysore City.

The mean score of pre-test Respiratory rate was lower than the post- test respiratory Rate .There was no significant difference in Respiratory Rate among Traffic police after breathing exercise ,t = -0.771 was not significant (p>0.05) .The mean score of Pre –test systolic BP was higher than the Post –test systolic BP .There was a significant difference in systolic BP among Traffic Police after Breathing exercises , t= 2.319 and Diastolic BP t= 3.595 were significant (p<0.05).The Spirometry mean score were significantly increased in post –test than in pre-test among Traffic Police after breathing exercises, t = -2.60 was significant (p< 0.05) .The mean score of pre –test and post –test PEFR among traffic Police were significant t = -3.70(p<0.05)

3) Findings on the association between the selected back ground factors and the Mean difference on the respiratory health among Traffic Police in Mysore City

The age was independently associated with respiratory health status among Traffic Police, t=0.944 (p >0.05).There was no significant association between the working hours and the respiratory health status of Traffic Police, t = 0.218 (p > 0.05) .There was no significant association between the shift of working and respiratory health status among Traffic Police, t = 0.086 (p >0.05) .The experience had no significant association with the respiratory health status among Traffic Police , t = 0.197 (p > 0.05). The exposure to heavy traffic area was independently associated with respiratory health status among Traffic Police, t = 0.246 (p >0.05). There was no significant association between the medical checkup and the respiratory health status among Traffic Police, t= 0.53 (p>0.05). There was no significant association between the habits and respiratory health status of traffic Police, t = 0.504. There was no significant association between the use of personal safety measures and respiratory health status of Traffic Police t= 0.19 (p >0.05). The history of respiratory illness was associated with respiratory health status among Traffic Police, t= 0.007 (p < 0.05).

H_1: There will be a significant difference between the pretest score and posttest respiratory health status score in relation to the breathing exercise, among traffic police in Mysore city.

H_2: There will be a significant difference between the mean difference of the pre –test and post – test respiratory health parameters in relation to breathing exercises

H_3: There will be a significant association between the selected back ground factors and the mean difference on the respiratory health among traffic police among traffic police in Mysore city.

Discussion

Total samples selected for the study were 45 one group pre-test posttest, Age: In this study it was found that majority of Traffic Police (46.7%) were aged between 41-50 years, majority (95.6%) works more than 8 hours of duty hours, mostly (42.3%) had evening shift, had more than three years of experience, undergo medical checkup every year, (46.6%) has none of the habits and do not use the personal safety measures.

Majority (91.1%) of traffic police were often exposed to the heavy traffic area during work. 38 (84.4%) of traffic police had no history of any respiratory illness.

The obtained mean difference between pre and post test score is -2.69. The obtained t value is - 8.734 ($p < 0.05$) was highly significant. Therefore, null hypothesis H_{01} was rejected.

It was inferred that there was significant difference between the pretest score and posttest respiratory health status score in relation to the breathing exercises among traffic police in Mysore City

The obtained mean score of Pre-test Respiratory rate was 20.53(2.537) and post –test was 20.67 (2.594), Blood Pressure in that, Pre-test mean score is 131.07 (8.545) and post –test mean score was 130.44 (8.387) of Systolic Blood Pressure and

Pre-test mean score was 87.16(6.23) and Post –test mean score was 85.24 (7.401) of Diastolic Blood Pressure among traffic police. The pre-test means score 1146.67 (115.994) and post –test mean score 1186.67 (62.523) of spirometery readings among traffic police. The pre-test means score 411.78 and post- test mean score 423.11 of PEFR readings among traffic police.

The null hypothesis H_{02} is rejected. It infers that there was a significant difference between the mean difference of the pre –test and post – test respiratory health parameters in relation to breathing exercises except respiratory rate.

It infers that breathing exercise has reduced the systolic and diastolic blood pressure, improved the spirometery and PEFR among Traffic police and respiratory rate has no significant change. It infers that breathing exercises were effective among traffic Police.

Difference In Respiratory Health Status Among Traffic Police reveals the obtained "t" values regarding back ground factors such as, age t=0.944, working hours t= -0.218, shift t = 0.086 , experience t=0.197, exposure to heavy traffic area t = 0.246, medical checkup t= 0.53, habits t=0.504 , personal safety measures t= 0.19 shows no significant association ($p > 0.05$) with mean difference in respiratory health status among traffic police .Therefore the null hypothesis H_{03} was accepted .This infers that there is no significant association between the selected back ground factors age , working hours ,shift , experience , exposure to heavy traffic area, medical checkup ,personal safety measures 's mean difference on the respiratory health among traffic police in Mysore city.

Whereas the history of respiratory illness t= 0.007 shows significant association ($p <0.05$) with mean difference in respiratory health status among traffic police. Thus the null hypothesis H_{03} was rejected. This infers there is significant association between the selected background factor i.e., the history of respiratory illness and mean difference of the respiratory health status.

Therefore, all the background factors except the history of respiratory illness, made no significant difference ($p > 0.05$) in respiratory health status. Hence background factors did not predict the improvement of the respiratory health status among Traffic police. Therefore, breathing exercises was independently effective among traffic police in improving the respiratory health status except the history of respiratory illness

Conclusion

The aim of the study was to assess the respiratory health before and after breathing exercises among Traffic Police in Mysore City. The following conclusions were drawn from the results of the study.

The respiratory health status among Traffic police was from moderate to poor before the video teaching programme on breathing exercises. The introduction of the video teaching programme for Traffic Police more

regarding the Breathing exercises enabled them to learn it and practice. This was evident in the post test score of respiratory health status.

The post test score of respiratory health status showed that there was a significant improvement in respiratory health score after the introduction of video teaching programme and regular practice of the breathing exercises. Thus Traffic police must be encouraged to practice the specified breathing exercises as de monstrated in the video teaching programme. The regular and consistent practice of breathing exercises will improve the respiratory health status among Traffic Police.

Then the background factors like age, Years of experience, working hours, medical checkup, habits and use of safety devices had no significant association on the mean score of the respiratory health status and history of respiratory illness had significant association on the mean score of the respiratory health status. Thus breathing exercises were independently effective among traffic police to improve the respiratory health status except the history of respiratory illness. Hence the regular and consistent practice of breathing exercises helps to maintain the respiratory health status among Traffic Police.

implication

The study findings have included the implications for the future in relation to nursing education, nursing practice and nursing research.

Nursing education

- Integration of theory and practice is vital need and its important in nursing profession. Therefore, nurse educator can use the result of the study as information to the students.
- Nursing role in the preventive aspect of health has to be much stressed rather than just the cure aspect regarding health.
- Nurses and nursing students have to think through the community health aspect to contribute from the nursing field to the community regarding the preventive aspect.
- Nursing education should have the sense of care towards the personnel from the different occupational sector.
- Nursing curriculum has to throw the light regarding specialization in different specialties under the subject Community health nursing.

Nursing practice

- Nurses through their knowledge under the community health aspect need to have concern regarding the groups of people under different sector of occupation and area of threat to their health through their own occupation and render precautionary measures from Nursing to minize the risk of getting into the various health problems related to their occupation.
- Nursing can greatly impact the groups at risk to follow the steps and measures to safe guard themselves to work efficiently without causing any risk to their own health.
- Nursing can encourage those personnel engaged in different occupation to be regular in medical checkup keeping in mind the threat which they might get into if they neglect their health.
- Emphasize the need of proper use of protective devices as present for them in their respective occupation.
- Traffic Polices should be made aware about the specific diagnostic measures which they can under go to keep their respiratory health in good condition.

- Proper idea regarding the actual benefits regarding of breathing exercise and effect of regular practice on respiratory health has to be inculcated among the Traffic police.
- Need of the use of oxygen chamber for traffic police during duty hours has to be highlighted.
- Much of awareness program has to be conducted among traffic Police regarding their health has to be increased.

Nursing research

- Respiratory health assessment among various occupational sectors has to be carried out.
- Many more research can be carried out among traffic police through the concern from the occupational health.
- Present study has considered only one particular zone for the study, further other zones can be included and whole city traffic police can be assessed.
- Comparison of the respiratory health among various occupations should be carried out to have wide ideas to prevent the health problems in that particular occupation.
- Retrospective studies can be taken up regarding the respiratory health aspect thus it helps to find out the relation between the morbidity and occupation which they are involve.
- Other interventions' effect on health could be assessed among the traffic police.

Nursing administration

- Nurse as a administrator can use the support of the research findings to emphasize on the providing provision of the oxygen chambers for the traffic police during their duty hours.
- Can inform the concern authorities to improve the protective devices with required modifications so that it can be used easily during the traffic police during duty hours.

Limitations

- The study was limited to the traffic police of Mysore City.
- The respiratory health examination spirometry was manual.
- Oxygen Saturation level was not assessed.
- Convincing the officers to bring all the traffic police at one place for a longer time was difficult.
- The investigator had difficulty in convincing the officers to arrange and bring all the traffic police of one zone together at one place.

Recommendations

On the basis of the findings the study it is recommended that

- A similar study could be conducted on a large group of sample in a different area.
- A study can be conducted to assess the other aspect of health among traffic police.
- A study can be conducted to assess the knowledge of traffic police regarding the breathing exercises on their respiratory health
- A study can be conducted to assess the attitude of traffic police regarding their health
- A same study can be conducted in different cities to compare the reasons behind the variations between the health aspects of two cities.
- A retrospective study to assess the cause behind the respiratory illness and use of protective devices can be conducted
- A study to assess the general health status of traffic police can be conducted.
- A study regarding the stress among traffic police can be conducted.

- A study to assess the effectiveness of video teaching regarding the effect of pollutants on health of traffic police can be conducted.
- A study to assess the knowledge of traffic police regarding use of protective devices in an effective can be conducted.
- A study to assess the practical problems in using the protective devices during duty hours among traffic police can be conducted.

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References

1. WHO‘s report on Programmes and projects Occupational health 2008. Available from: URL: http://www.who.int/occupational_health/en/.
2. The Free Dictionary, Traffic control police Available from: URL: http:// www. the free dictionary. com/
3. Suddarth and Brunner. Text Book of Medical Surgical Nursing, 10th edition, Philadilphia Lippincott Williams and Wilkins Publishers; 2004.
4. Park. K. Text book of preventive and social medicine. 19 th edition, Jabalpur. India, M/S Banarsidas Bana not publishers; 2007.
5. Lewis, Heitkemper, Dirksen, Medical Surgical Nursing. 7th Edition, USA: Elsevier; 2007.
6. Davis, Eshelman, and McKay. The Relaxation and Stress Reduction Work book.2nd Edition: New Har bringer Publications; 1982. URL: www. Anmol Mehta. com/ blog/ 2008/ 08/ 04 (breathing - exercise)
7. Joyce M Black. Medical-surgical Nursing.7 th edition. New Delhi: Elsevier Saunders Publisher; 2005.
8. CPCB Newsletter. Available from: URL: http:// www. cpcb.nic.in.
9. World Health Organization. World Health Report 2002. WHO: Geneva; 2002.Aavailable from URL: http:// www. who/ report _ en.
10. National Ambient Air Quality Monitoring Series. Central Pollution Control Board Report. Delhi: Ministry of Environment and Forest Government of India; 1996-97
11. Prabhakar. Environmental Education Centre of Chennai and Mysore Grahakara Parishat conducted the survey on Excessive air and noise pollution levels in the city of palaces. The Hindu 2007 Nov 30th; sect. A: 2

(2). Available from: URL: http:// www. Hindu. com/ 2007/ 11/ 30/ stories/ 2007113053910600.htm

12. Nihal Koshie. Pollution takes its toll on traffic cops: The Government General and Chest Hospital (GGCH) has revealed that 45 per cent of traffic policemen suffer from respiratory and non-respiratory problems., The Times of India 2002 Jun 25; sect A: 1 (col 2).

13. Sagar. A, etal, A comparative study of air pollution-related morbidity among exposed population of Delhi. Indian Journal of Community Medicine.2007 Dec; Vol: 32 (4). [cited 2007] Available from URL: http:// www. ijcm. org.in/text.asp

14. Padhi BK and Padhy PK. Assessment of intra-urban variability in outdoor air quality and its health risks. Centre for Environmental Studies. 2006-2007.20(11); [cited 2006] Available from: URL: http:// Informa health care. com/ doi/ abs/ 10.1080/ 0895 8370 8024 48961

15. Tarun Saxena and Manjari Saxena. The effect of various breathing exercises (pranayama) in patients with bronchial asthma of mild to moderate severity. 2009 Volume (2) Issue (1). Available from: URL: http:// www. ijoy. org.in/ article. asp? issn=0973-6131; year=2009

16. Nield MA, Soo Hoo GW, Roper JM and Santiago S. Assessed the efficacy of pursed-lips breathing: a breathing pattern retraining strategy for dyspnea reduction among COPD patients.2007. 27(4). [cited on 2007 Jul] Available from: URL: http:// www. ncbi. nlm. nih. gov/ PubMed/17667021

17. Indian Express, Express News Service, Breath of fresh air for traffic cops, 8,2006 Posted: Aug 25, 2008 at 0102 hrs. Available from: URL: http:// www. express India. com/ latest - news/ Breath – of – fresh – air – for – traffic - cops/ 352 954/