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# A Descriptive Study to Assess the Knowledge and Practices Regarding COPD Prevention and Management among Staff Nurses in Selected Hospital of District Patiala

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## ABSTRACT

A descriptive study to assess the knowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala. The global burden of disease study reports a prevalence of 251 million cases globally in 2016. Globally, it is estimated that 3.17 million deaths were caused by the disease in 2015 (that is, 5% of all deaths globally in that year). COPD is an important cause of mortality and morbidity in our country and all over the world. Prevalence of COPD is being anticipated to increase due to continuing risk factors and aging of society. Although, COPD is a disease involving the respiratory medicine experts, its symptoms and diagnostic criteria should also be known by the primary healthcare providers considering its economic burden. The study is non experimental descriptive method and data was collected through convenient sampling technique i.e self structured questionnaire and check list. The analysis was done through ANNOVA analysis test. Practices like hand washing, proper medication, knowledge regarding medicines, oxygen therapies, diagnostic tests (spirometry), pulmonary rehabilitation, infection control techniques, non-invasive ventilation, inhalation techniques, and therapeutic outcomes regarding COPD prevention and management will be average among staff nurses.

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The selected staff nurses in selected hospital were taken 100. 5% staff nurses were excellent, 86% were good, 9% were at average. 7% had good skills and 93% had poor skills. Mean of practices was 61.23, standard deviation was 29.437 and mean of knowledge was 64.64, standard deviation was 9.853. t score of practices was 24.197 and knowledge was 65.605. It was found that association of knowledge regarding COPD prevention and management with selected demographic variables. The selected demographic variables age, gender, professional qualification, attended any COPD patient were having significant relationship whereas marital status, previous rotation in respiratory wards, years of experience in respiratory wards were having non significant relationship. Göktalay Tugba., et al., who conducted a cross-sectional study to determine knowledge level of the health care providers about COPD and PR in Manisa city. 65.5% of the health care providers responded to the survey. Rate of those correctly knowing at least one of four items was 97.2%. Mayhob Mona Mohamed conducted a descriptive study to assess nurses knowledge, practices and barriers affecting a safe administration of oxygen therapy.18% had adequate practices, 40% had average practices and 42% had inadequate practices. Mahran Ghada., et al., conducted a comparative study of critical nurses' knowledge and practice before and after education program about acute exacerbation of COPD in Egypt. , internship nurses had higher knowledge about previous mentioned items (83.33%), (93.33%) and (80%) than registered nurses (26.66%), (66.66%) and (66.66%).Catherine A O'Donnell, Hussein Jabareen, et al., [2010] conducted a cross sectional survey to identify workload, career intentions and the impact of

professional isolation among practice nurses. Isolated nurses worked in practices with smaller list sizes ($p = 0.024$) and nursing teams ($p = 0.003$); were less likely to have someone they could discuss a clinical/professional ($p = 0.002$) or personal ($p < 0.001$) problem with; used their training and qualifications less ($p < 0.001$); had less productive appraisals ($p < 0.001$); and were less likely to intend staying in practice nursing ($p = 0.009$). The result of the present study shows that there is a great need for the nurses to update their knowledge so as to save the life of the victim.

## 1. INTRODUCTION

## BACKGROUND OF THE STUDY:

### Introduction:

Chronic obstructive pulmonary disease (COPD) is a progressive life threatening lung disease that causes breathlessness and predisposes to exacerbations and serious illness. The global burden of disease study reports a prevalence of 251 million cases globally in 2016. Globally, it is estimated that 3.17 million deaths were caused by the disease in 2015 (that is, 5% of all deaths globally in that year). More than 90% deaths occur in low and middle income countries. The primary cause of COPD is exposure to tobacco smoke (either active smoking or secondary hand smoke). Other risk factors include exposure to indoor and outdoor air pollution and occupational dusts and fumes. Exposure to indoor air pollution can affect the unborn child and represent a risk factor for developing COPD in later life. Many cases of COPD are prevented by avoidance or early cessation of smoking. Hence, it is more important that countries adopt the WHO Framework Convention on Tobacco Control (WHO-FCTC) and implement the MPOWER package of measures so that non-smoking becomes the norm globally. COPD is not curable, but treatment can relieve symptoms, improve quality of life and reduce the risk of death.[1]

COPD is a major cause of global morbidity and mortality that affected 44 million people in 1990. Indeed, almost three million people died from this condition in 2000. It is becoming more prevalent among western women and is set to increase substantially with the export of tobacco to developing countries such as India, Mexico, Cuba, Egypt, South Africa and China. Despite being such a major health concern, only limited therapeutic options are available with most of the medications having been developed for the treatment.[2]

COPD is a major public health problem. COPD is the end result of a susceptible lung being exposed to sufficient environmental stimulus. Caused principally by tobacco, smoking and household air pollution (HAP), COPD is a silent killer in low-and middle-income countries (LMICs): an estimated 328 million people have COPD worldwide and in 15 years, COPD expected to become the leading cause of death. According to global burden of disease (GBD), COPD is already third leading cause of death worldwide, something that WHO had not predicted to occur until 2030. The economic impact of COPD among LMICs is expected to increase £1.7 trillion by 2030. Air pollution is the biggest environmental cause of death worldwide, HAP accounting for about 3.5-4 million deaths every year.[3]

In India, Non Communicable Diseases were estimated to have accounted for 53% of all deaths and 44% of disability- adjusted life-years (DALYs) lost in 2005. Of these chronic respiratory diseases accounted for 7% deaths and 3% DALYs lost. India also has had the ignominy of experiencing the "highest loss in potentially productive years of life worldwide" in 2005. Crude estimates suggest there are 30 million COPD patients in India. India contributes a significant and growing percentage of COPD mortality which is estimated to be amongst the highest in the world; i.e. more than 64.7% estimated age standardized death rate per 100,000 amongst both sexes. This would translate to about 556,000 in case of India (≥20%) out of a world total of 2,748,000 annually.[4]

COPD was the second highest cause of death in India after heart disease in 2017, killing 1 million (958,000) Indians that year according to University of Washington's Global Burden of Disease study, 2018. COPD led to 13% of all deaths in India, and 7.5 million were at risk of the disease in 2016, ***Indiaspend*** reported in January 2018. Knowledge about non-smoking risk factors for COPD is only about a decade old and one of the Reseachers instrumental in providing India's burden primarily because of burning biomass for fuel.[5]

Latest global estimates illustrate the vast impact of the common chronic respiratory diseases, with 3.2 million deaths from chronic obstructive pulmonary disease (COPD) in 2015, according to a new Global Burden of Disease study published in The Lancer Respiratory Medicine Journal. The number of cases and deaths caused by the diseases between 1990 and 2015. While overall prevalence and death rates have reduced since 1990, population growth and the aging population mean that the numbers have increased. The number of deaths from COPD increased by 11.6% between 1990 and 2015 (from 2.8 to 3.2 million deaths), and the number of case increased by 44.2% (from 121 to 174.5 million cases).[6]

India contributes very significantly to mortality from

COPD 102.3/100,000 and 6,740,000 DALYs out of world total of 27,256,000 DALYs; thus significantly affecting health related quality of life in the country. COPD is surpassing Malaria, TB even today and the gap would get wider with time in near future. Multiple studies from 1994 to 2010 show increasing trends of COPD morbidity and mortality. Since most inhalation drugs are available in the country there is no reason why mortality should not be comparable to rest of the world but there is poor adherence to treatment guidelines, both national and international.[7]

Chronic Obstructive Pulmonary Disease (COPD) is a disease state characterized by airflow limitation that is not fully reversible. This newest definition of COPD, provided by the Global Initiative for Chronic Obstructive Lung Disease (GOLD), is a broad description that better explains this disorder and its signs and symptoms (GOLD, World Health Organization [WHO] and National Heart, Lung and Blood Institute [NHLBI], 2004). Although previous definitions have included emphysema and chronic bronchitis under the umbrella classification of COPD, this was often confusing because most patients with COPD present with over-lapping signs and symptoms of these two distinct disease processes. COPD may include diseases that cause airflow obstruction (eg, emphysema, chronic bronchitis) or any combination of these disorders. However, asthma is now considered a separate disorder and is classified as an abnormal airway condition characterized primarily by reversible inflammation. COPD can coexist with asthma. Both of these disease have the major symptoms.[8]

Chronic Obstructive Pulmonary Diseases (COPD) is a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The more familiar terms 'chronic bronchitis' and 'emphysema' are no longer used, but are now included within the COPD diagnosis. COPD is not simply a "smoker's cough" but an under-diagnosed, life threatening lung disease.[9]

Chronic bronchitis, a disease of the airways, is defined as the presence of cough and sputum production for at least 3 months in each of two consecutive years.[5] It is inflammation and irritation of the bronchial tubes.[10]

The primary cause of chronic obstructive pulmonary disease is tobacco smoke (active as well as passive smoking). The causes for COPD have opposite patterns according to the geographic areas. In high and middle income countries tobacco smoke is the biggest risk factor, meanwhile in low income countries exposure to indoor air pollution, such as the use of biomass fuels for cooking and heating, causes the COPD burden. Almost 3 billion people worldwide use biomass and coal as their main source of energy for cooking, heating and other household needs. In these communities, indoor air pollution is responsible for a greater fraction of COPD risk than smoking or outdoor air pollution. Biomass fuels used by women for cooking account for the high prevalence of COPD among non-smoking women in parts of Middle East, Africa and Asia. Other risk factors for COPD includes occupational dusts and chemicals such as vapours, irritants and fumes and frequent lower respiratory infections during childhood.[11]

Risk factors of COPD include environmental exposures and host factors. Smoking depresses the activity of scavenger cells and affects the respiratory tract's ciliary cleansing mechanism, which keeps breathing passages free of inhaled irritants, bacteria, and other foreign matter.[8]

COPD is characterized by three primary symptoms: chronic cough, sputum production and dyspnoea on exertion. These symptoms often worsen over time. Chronic cough and sputum production often precede the development of airflow limitation by many years. However not all people with cough and sputum production develop COPD. Weight loss is common because dyspnoea interferes with eating and the work of breathing is energy-depleting. In patients with COPD has a primary emphysematous component, chronic hyperinflation leads to the "barrel chest" thorax configuration.[5] An ongoing cough or a cough that produces a lot of mucus; that is often called smoker's cough, wheezing or whistling or squeaky sound when person breathes and chest tightness are some symptoms that will appear in patient with COPD.[12]

Pulmonary function studies are used to help confirm the diagnosis of COPD, determine disease severity and monitor disease progression. Spirometry is used to evaluate airflow obstruction, which is determined by the ratio of $FEV_1$ to forced vital capacity (FVC). Arterial Blood Gas measurement may also be obtained to assess baseline oxygenation and gas exchange and are especially important in advanced COPD. In addition chest X ray may be obtained to exclude alternative diagnosis. A CT scan is seldom diagnostic in COPD is not routinely obtained in the diagnosis of COPD. Lastly screening for $alpha_1$ - antitrypsin deficiency may be performed for patients younger than 45 years.[5] A blood test can show other condition that can cause similar symptoms to COPD, such as low iron level (anaemia) and high concentration of red blood cells in blood (polycythaemia). Electrocardiogram that measures the electrical activity of the heart. Echocardiogram that

scans the heart. A peak flow test, breathing test that measures how fast one can blow air of his/her lungs, which help to rule out asthma.[13]

Smoking cessation is the only intervention proven to slow the accelerated decline in lung function and progression of COPD. Smoking cessation is difficult to achieve and even more difficult to sustain in the long term. Continued smoking is also more prevalent among those with low incomes, low levels of education, or psychological problems. Bronchodilators relieve broncho spasm and reduce airway obstruction by allowing increased oxygen distribution throughout the lungs and improving the alveolar ventilation. Inhaled and systemic corticosteroids may also be used in COPD but are used more frequently in asthma. A metered dose inhaler is a pressurized device that contains an aerosolized powder of medication. Oxygen therapy can be administered as long-term continuous therapy, during exercise, or to prevent acute dyspnoea. Surgical management includes bullectomy, lung volume reduction surgery and lung transplantation.[8]

Reduction of total personal exposure to tobacco smoke, occupational dusts and chemicals, and indoor and outdoor air pollutants are important goals to prevent the onset and progression of COPD. The overall approach to managing stable COPD should be characterized by stepwise increase in treatment, depending on the severity of the disease. The long term administration of oxygen to patients with chronic respiratory failure has been shown to increase survival. Exacerbations of respiratory symptoms requiring medical intervention are important clinical events in COPD.[14]

**NEED OF STUDY-**

Currently, COPD is a fourth leading cause of mortality and the 12th leading cause of disability in the United States; however, by the year 2020 it is estimated that COPD will be the 3rd leading cause of death and 5th leading cause of disability (Sin, McAlister, Man, et al., 2003). In 2001, chronic pulmonary disorders caused 123,013 deaths in people of all ages, regardless of gender, and male/female age-adjusted ratio was 1:4 (Aria, Anderson, Hsiang-Ching, et al., 2003), the united states have some form of COPD. The annual cost of COPD is approximately $32.1 billion, including health care expenditures of $18.0 billion and indirect costs of $14.1 billion (American Lung Association, 2004)[8]

Chronic obstructive pulmonary disorders are a leading cause of morbidity and mortality in the United States. Nurses are involved with patients with chronic pulmonary disease across the spectrum of care, from outpatient and home care to critical care and hospice setting. Patients with chronic pulmonary disorders need care from nurses who not only have astute assessment and clinical management skills but who also understand how these disorders can affect quality of end-of-life care is important for affected patients. Patient and family teaching is an important nursing intervention to enhance self-management in patients with any chronic pulmonary disorder.[8]

Chronic obstructive pulmonary disease (COPD) causes more than 500,000 hospitalizations and more than 100,000 deaths in the United States each year. In addition, millions of Americans are disabled as a result of these disease. Unfortunately, the treatment options available to patients with COPD and their physicians are limited, and no pharmacologic therapy slows the progressive loss of lung function occurs. Because of health burden imposed by COPD and the urgent need for better management of this disease, the National Heart, Lung and Blood Institute (NHLBI) convened a working group on March 21-22, 2002 to examine needs and opportunities for clinical research in COPD.[15]

COPD is an important cause of mortality and morbidity in our country and all over the world. Prevalence of COPD is being anticipated to increase due to continuing risk factors and aging of society. Although, COPD is a disease involving the respiratory medicine experts, its symptoms and diagnostic criteria should also be known by the primary healthcare providers considering its economic burden.[16]

A study was conducted to assess the knowledge, attitudes, and behavioral intentions toward promoting pulmonary rehabilitation for patients with chronic obstructive pulmonary disease among staff nurses. Pulmonary rehabilitation is an effective strategy to manage COPD, through its utilization rate is low. One reason for this low utilization rate is that nurses do not provide COPD patients with enough health education to increase the patients' motivation for pulmonary rehabilitation participation. Result showed that accuracy rate of knowledge was approximately 12% and self-evaluated skills were less than 50%, self-efficacy in promoting rehabilitation was above average i.e. 57%-60% and the strength of attitudes and behavioral intentions was over 70%. Education courses and clinical practice training should be increased in the future to promote pulmonary rehabilitation of COPD patients.[17]

A study was conducted to evaluate the burden on patients with chronic pulmonary disease. High-related quality of life measures are widely used in patients with COPD. However, they are extremely limited when used to evaluate patients outside the clinical

trials. The disease mainly affects old men (more than 50% were over 65 years of age) and non-employed men (23% were employed). Of the patients studied, 22.7% continued smoking, especially men (24.4% of men vs. 18.1% of women). Most patients (54%) were diagnosed with moderate stage II COPD. Severity of COPD was lower in women: 29.6% of men had severe COPD compared with 13.7% of women. In this study, it is found that near about 36.6% people affected with COPD were admitted in hospital.[18]

A survey was conducted to assess prevalence and associated risk factors of COPD in Iran. The result concluded that 1,308 subjects out of 2,200 eligible people (59.4%) agreed to take part in the study. The enrolled population consisted of 672 women and 636 men, with an age range of 40-94 years. Overall, 279 individuals including 62 symptomatic and 217 asymptomatic cases took part in the study. The prevalence was 12.7% in men and 3.9% in females. Increasing age is a known risk factor for COPD. The older a person gets, the greater the chance of continued exposure to smoke and air pollutants. Occupation is a risk factor for respiratory illnesses in men. There is to increase the awareness about COPD and its related factors in our population. And another main thing is to cure the disease by the health care professionals. Level of knowledge and level of practices they perform on patients with COPD.[19]

According to European Respiratory Review, COPD is responsible for early mortality, high death rates and significant cost to health systems. The projection for 2020 indicates that COPD will be the third leading cause of death worldwide (from 6$^{th}$ in 1990) and the 5$^{th}$ leading cause of years lost through early mortality or handicap (disability-adjusted life years) (12$^{th}$ in 1990). Active smoking remains the main risk factor, but other factors are becoming better known, such as occupational factors, infections and the role of air pollution. Prevalence of COPD varies according to country, age and sex. This disease is also associated with significant comorbidities, COPD is a disorders that includes various phenotypes, the continuum of which remains under debate. The major challenge in the coming years will be to prevent onset of smoking along with early detection of the disease in the general population. The prevalence of COPD was estimated to be 7.6% independent of the defined diagnostic criteria. On the basis of 38 studies, the prevalence of chronic bronchitis was estimated to be 6.4%. The prevalence of emphysema was estimated to be 1.8% on the basis of eight studies.[20]

From all above studies and surveys, researcher come to know that COPD is the most crucial disease among people especially, in men. There are many prevalent cases in overall world. First priority is to control the increasing cases of COPD and second is to enhance knowledge and level of practices among staff nurses in hospitals.

During Clinical posting, Researcher observed the knowledge level of COPD among staff nurses is below the average level and practices that are performed on patient are poor in hospital. I found that the COPD patients were not properly recovering after treatment. Hence, Researcher felt that knowledge and practices regarding COPD are to be assessed so as to enhance the care of COPD patient, reduce the complications that may arise during providing practical care to the patient. Thus, study aims to assess the knowledge and practices regarding COPD prevention and management among staff nurses was planned to conduct.

**PROBLEM STATEMENT:**

A descriptive study to assess the knowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala.

**OBJECTIVES:**

1. To assess the knowledge regarding COPD prevention and management among staff nurses.
2. To determine the practices of COPD prevention and management among staff nurses.
3. To compare the knowledge and practices regarding COPD prevention and management among staff nurses.
4. To find out the association of knowledge regarding COPD prevention and management with selected demographic variables among staff nurses.
5. To provide pamphlet regarding COPD prevention and management among staff nurses.

**OPERATIONAL DEFINITIONS:**

**Knowledge:** It refers to the awareness or understanding of something which is acquired through theoretical learning of a subject.

**Practices:** It refers tothe actual use of an idea, belief, or method, as opposed to theories relating to it.

**COPD:** It is a Chronic Obstructive Pulmonary Disorder characterized by obstruction or blocking of airflow in the lungs which interferes the normal breathing and is not fully reversible. It is the combination of two diseases i.e. chronic bronchitis and emphysema.

**Staff Nurse:** a person who works in a hospital to take care of the ill and injured whose rank is below than that of a sister.

**ASSUMPTIONS:**

The knowledge of COPD will be below the average level among staff nurses in a selected hospital of district Patiala. Practices like hand washing, proper medication, knowledge regarding medicines, oxygen therapies, diagnostic tests (spirometry), pulmonary rehabilitation, infection control techniques, non-invasive ventilation, inhalation techniques, and therapeutic outcomes regarding COPD prevention and management will be average among staff nurses.

**DE-LIMITATIONS:**

The study was de-limited to-

- Staff nurses only.
- 100 sample only.
- Rajindra Hospital of District Patiala.

## 2. REVIEW OF LITERATURE

Review of literature is a key step in the research process. Review of literature refers to extensive, exhaustive and systematic examination of publication of relevant to research project.

The related literature for the present study was organized and presented under following headings:

### SECTION – A: REVIEWS REGARDING KNOWLEDGE OF COPD PREVENTION AND MANAGEMENT AMONG STAFF NURSES

Rebecca Nantanda, Gerald Kayingo, et al., [2020] a cross sectional study was conducted among primary care health workers, specialist physicians and healthcare planners to assess gaps in knowledge and skills and, training needs in managing respiratory illnesses.Data were collected using questionnaires, patient panel discussions and review of pre-service training curricula for clinicians and nurses.A total of 104 respondents participated in the survey and of these, 76.9% (80/104) were primary care health workers, 16.3% (17/104) specialist clinicians and 6.7% (7/104) healthcare planners. Over 90% of the respondents indicated that more than half of the patients in their clinics presented with respiratory symptoms. More than half (52%) of the primary care health workers were not comfortable in managing chronic respiratory diseases like asthma and COPD. Only 4% of them were comfortable performing procedures like pulse oximetry, nebulization, and interpreting x-rays. Majority (75%) of the primary care health workers had received in-service training but only 4% of the sessions focused on respiratory diseases. The pre-service training curricula included a wide scope of respiratory diseases, but the actual training had not sufficiently prepared health workers to manage respiratory diseases. The patients were unsatisfied with the care in primary care and reported that they were often treated for the wrong illnesses.[21]

Ma Yiming, Peng Yating, et al., [2019] conducted a descriptive cross-sectional study to investigate COPD-related knowledge levels among internal medicine nurses in large top-ranked tertiary hospital in China from August 2019 to September 2019. There were two target populations: (1) Respiratory nurses (2) Non-respiratory nurses. This study is aimed to assess COPD-related knowledge in internal medicine nurses. The Bristol COPD knowledge questionnaire (BCKQ) was used to test COPD-related knowledge levels in the participants. Questionnaires were initially distributed to 180 nurses who met the inclusion criteria, five nurses were excluded because of going on vacation (n=3) or going out for training (n=2). Therefore there were total 175 nurses included in this study. Overall BCKQ score for all nurses in this study was 35.76 ± 5.49. In comparison with non-respiratory nurses, the overall score among respiratory nurses was significantly higher (39.01 ± 3.95 vs 33.32 ± 5.23, $p$ <0.001). Overall knowledge regarding COPD to all nurses were on the following basis- a)Epidemiology- 50.4%, b)Etiology- 72.6%, c)Symptoms- 60.4%, d)Breathlessness- 36.4%, e)Phlegm- 75.8%, f)Infections- 68.6%, g)Exercise- 60%, h)Smoking- 60.2%, i)Vaccination- 68.2%, j)Inhaled bronchodilators- 63.8%, k)Antibiotics- 72.8%, l)Oral steroids- 51.6% and m)inhaled steroids- 34.2%. Internal medicine nurses at this tertiary hospital showed deficits in COPD-related knowledge.[22]

Guo Su-Er, Shen Hsueh-Chen., et al., [2018] conducted a cross sectional correlational study to examine knowledge, attitudes, and behavioral intention toward PR promotion in Taiwan. This study also investigated the correlates of behavioral intentions to promote PR among pulmonary nurses. Overall, 284 nurses (all women) from chest medicine and general internal medicine wards in 3 hospitals within Midwest Taiwan were recruited. Questionnaires tool was used to collect data. Two groups of nurses (i.e. chest medicine, general medicine) showed no differences in PR knowledge, attitudes, or behavioral intentions, they lacked sufficient PR knowledge and skills. The accuracy rate of PR knowledge was approximately 12% and self-evaluated PR skills were less than 50%. Self-efficacy in promoting PR was above average (i.e. 57%-60%), and the strength of attitudes and behavioral intentions was over 70%. Questionnaires were distributed to 356 nurses who met the inclusive criteria, and 300 participants were initially included. 16 participants were excluded due to missing information; therefore, 284 valid questionnaires were included for data analysis. Pulmonary rehabilitation-related knowledge and skills were lower than 15.0% and 50.0% of total

scores, respectively; knowledge about COPD and self-efficacy were both approximately 60%; and attitudes toward PR and behavioral intentions toward PR promotion were higher than 70%. Moreover, only 29.1% of nurses would actively promote PR and 8.3% of them acknowledged that PR-related health education is the most important for patients with COPD.[23]

Godoy Ilda De, Godoy Irma., et al., [2016] conducted a cross sectional study to evaluate the knowledge of nurses from the health care network of Botucatu, SP, Brazil, about COPD. 243 nurses from primary care and hospital care were invited to participate of study. 81.6% of nurses defined COPD incorrectly, 76.1% considered spirometry not necessary for diagnosis, 79% did not answer correctly the questions related to Bronchodialtors and technique of use of inhaled medications was known by only 15.4%. Vaccines were recommended for COPD was unknown for 47%. They concluded that nurses have gap in their knowledge about: COPD definition, risk factors for disease, diagnostic tools, and management of stable of exacerbated diseases, guidance and supervision of treatment, mainly of inhaled drugs, vaccines and long- term oxygen therapy. Nurses are not ready to deal with COPD patients; however, they recognize that there knowledge about the disease is incomplete and express the desire to be trained and oriented to delivery effective prevention and management.[24]

Kathleen Moreo, Laurence Greene, and Tamar Sapir, [2016] conducted aQI project to identify inter professional and coproductive correlates of COPD care quality in the context of a continuing education program designed to advance knowledge and skill among patients, providers, and the inter professional COPD team regarding coproductive COPD care. Participants in the program included providers in 30 primary care practices across the U.S. In addition, more than 1,000 additional providers and 200 patients participated in just the online/mobile education. As indicated in self-assessment evaluations following the on-demand online and mobile educational activities, the 30 primary care providers in the cohort significantly improved their knowledge, attitudes, and beliefs related to coproductive COPD care. All cohort providers expressed confidence in being able to achieve their personal action plans over the next six months to improve the quality of their COPD patients' care. From pre- to post-program, there was a 55% increase in providers' self-reported ability to discuss referrals for case management, skilled nursing, and palliative care with COPD patients; a 32% increase in recognizing benefits of pulmonary rehabilitation; and a 36% increase in providers' self-rated ability to discuss COPD prognosis/progression and available pharmacologic options with their patients. Improvements were also seen among the more than 1,000 inter professional learners nationwide who accessed the online activities (43% primary care; 12% physician specialists; 34% nurse case managers; 7% pharmacists; 4% physician assistants). There was a 43% increase in learners' self-reported ability to discuss referrals for case management, skilled nursing, and palliative care with COPD patients; a 25% increase in recognizing benefits of pulmonary rehabilitation; and a 47% increase in self-rated ability to discuss COPD prognosis/progression and available pharmacologic options with COPD patients.[25]

Barbara P. Yawn, [1] Peter C. Wollan, et al.,[2016] conducted a Survey to assess current primary care physicians', nurse practitioners' (NP) and physicians assistants' (PA) knowledge, attitudes and beliefs regarding chronic obstructive pulmonary disease (COPD). 26 primary care clinicians (278 medical doctors [MDs] and doctors of osteopathic medicine [DO] and 148 NPs/PAs) provided useable responses (overall response rate 61%). This is a survey study of clinician attendees at 3 large regional continuing medical education (CME) programs designed to provide didactic presentations on a broad range of primary care topics including a 60 to 90 minute presentation on COPD. Overall 436 surveys (278 MD/doctor of osteopathic medicine [DO] and 148 NP/PA) were returned with all or most (>95%) questions answered (questionnaire). The response rate varied by site from 75% and 81% for the 2 Florida events to 44% from the Chicago event for an overall response rate of 61%. Information is not available on response rate by level of training. Physician respondents were older, less likely to be women and have more years in practice than NPs/Pas. Overall, more than 70% of the respondents practiced in communities > 50,000 residents with about 8.0% of physicians and 10.8% of NPs/PAs practicing in rural communities. Half of the physicians practiced in single specialty primary care groups and 66.2% in groups of 5 or fewer physicians. Of the NPs, 15 of 56 (26.8%) worked in NP only offices. NPs and PAs reported that 57% had 5 physicians or fewer in their offices. NPs and PAs were slightly but not significantly less likely to work in single specialty practices compared to physicians. The only significant difference between Florida and Chicago respondents was that the Chicago clinicians were on average older than those from Florida. About half of the respondents reported awareness and use of COPD guidelines (49.9% of physicians versus 46.0% NPs/PAs) with 31.7% versus 27.0% respectively, reporting lack of awareness or use of any COPD

guideline. The rest reported awareness that COPD guidelines were available but did not use them in daily practice. Only about one quarter of respondents thought that COPD patients' symptoms were usually delayed until after 60 years of age and less than 10% considered COPD primarily a disease of men.[26]

GöktalayTuğba, Tuncal Ayşe Nur., et al., [2015] conducted a cross-sectional study to determine knowledge level of the health care providers about COPD and PR in Manisa city. Questionnaire was used to collect data from the sample. 65.5% of the health care providers responded to the survey. Rate of those correctly knowing at least one of four items was 97.2%. No responder knew all items correctly. Average value for correct answers was 5.30 ± 2.1 (range; 1-10). The physicians, men and those working in family health centers had higher level of knowledge on COPD compared to non-physician health care providers ($p = 0.006$), women ($p = 0.002$), and those are working in other practices ($p = 0.019$), respectively. Knowledge level of the primary healthcare providers on COPD and PR remains adequate.[27]

**SECTION – B: REVIEWS REGARDING PRACTICES OF COPD PREVENTION AND MANAGEMENT AMONG STAFF NURSES**

Bove D.G., Jellington M.O., et al., [2019] conducted a qualitative study to explore COPD patient's experiences with the new palliative organization named Comprehensive and Prospective Treatment and Individual Nursing (CAPTAIN) in Denmark in 2019. This aim of this study was to explore COPD patient's experiences with a new and altered palliative organization. Semi-structured interview was conducted with patients with severe COPD. Interview was taken from 10 patients. Patients described how the professional and the availability of their nurse was considered as the most important and positive change. It made patients feel safe, in control, and subsequently influenced their ability to self-manage their life and prevent being hospitalized. The patient did not emphasize the advanced care planning dialogues as something special or troublesome. It showed that it is relevant and meaningful to establish a structure that supports professional relationships between patient, nurse and physician based on patient's needs. The new way of structuring the outpatient care was highly appreciated by COPD patients and made them safe which brought confidence in self-management abilities. Analysis revealed that the new organization contributed to increased quality of life for patients with COPD, although a few also described being worried and skeptical toward the new structure of outpatient care. The patients described very consistently that it was the professional relationship with their c-nurse they valued most and that the relationship with their c-nurse positively influenced their ability to self-manage their life. Anxiety is highly prevalent in COPD, with prevalence rates up to 46% in outpatients. Findings showed that self-management support must combine care and support regarding medication and other COPD specific interventions combined with psychosocial support. The new palliative structure CAPTAIN supported an individualized professional relationship between patient and c-nurse and this relationship positively impacted patient's ability to self-manage their life with COPD.[28]

Gustafsson Tanja and Nordeman Lena [2018] conducted a descriptive qualitative study to describe asthma and chronic obstructive pulmonary disease nurse's experiences of caring for patients with chronic obstructive pulmonary disease in primary health care. 10 asthma and COPD specialized nurses were interviewed. Two main categories were found: the patient-nurse relationship and available resources. Several challenges emerged when connecting with patients and the nurses found it difficult to individualized care. They struggled with a lack of time and support from other professionals. Being responsible for asthma and COPD practice was experienced as positive, but could become overwhelming. The asthma and COPD nurses described several challenges and the need for support and resource to provide the best possible care for patients with COPD. The aim of the study was to describe ACNs' experiences of caring for patients with COPD in primary health care. COPD is a complex disease making great demands on primary health care. This study indicates that caring for patients with COPD is a challenge to the ACN.[29]

N. Siouta, P. Clement, et al., [2018] conducted a qualitative study to examine the perceptions of health care professionals and the current practices of integrated palliative care (IPC) in Belgium.Cardiologists and pulmonologists, working in primary care hospitals in Belgium, participated in this study with semi-structured interviews based on IPC indicators. One researcher collected, transcribed verbatim the interviews and carried out their thematic analysis. To increase the reliability of the coding, a second researcher coded a random 30% of the interviews.A total of 22 CHF/COPD specialists participated in the study. The results show that IPC and its potential benefits are viewed positively. A number of IPC components like the holistic approach (physical, psychological, social, spiritual aspects) via

multidisciplinary teams, prognosis discussion and illness limitations, patient goals assessment, continuous goal adjustment, reduction of suffering and advanced care planning are partially implemented in several health centers. However, PC specialists are absent from such implementations and PC is still an end-of-life care.[30]

Hua Yin, Ling Yangand Qiao Ye, [2018] conducted a review studyto examine the effectiveness of CNS interventions in patients with COPD.A randomized controlled trial (RCT), which is in the top position of the evidence hierarchy, is qualified and suitable to answer this kind of question.Therefore, only RCTs were included in this review.There is low- to moderate-quality evidence indicating that home nursing support interventions may have a References positive effect on mortality (low-quality evidence) and quality of life (moderate-quality evidence). There is moderate-quality evidence that no significant difference in quality of life has been found between the CNS-supported discharge intervention and the usual service. When CNSs participate in a multidisciplinary cooperation program, the effect of this intervention is evaluated as a whole. A moderate level of evidence has been found illustrating that this intervention probably has a positive effect on quality of life of patients with COPD. Both nurse-led care and self-care management education intervention likely have a positive effect on mortality of patients with COPD. This evidence is of moderate quality.[31]

Zwakman Marieke., et al., [2017] conducted a qualitative study to explore patients' experiences regarding the COPD-Guidance Research on Illness Perception (COPD-GRIP). Semi-structured interview was conducted to collect data from patients. 16 patients were interviewed. All patients were positive and experienced an additional value of the COPD-GRIP intervention in different areas. Three main themes were identified and show that taking part in this intervention made the patients feel 'listened to and acknowledged', improved their awareness of the disease and its management and helped them to make lifestyle changes. Some patients suggested that individualized care plan could be improved and to start the intervention immediately after being informed of the COPD diagnosis. All patients recommended this information. The result of this study indicates that patients acknowledge that the COPD-GRIP intervention is a useful and promising tool for providing individualized COPD care.[32]

Jennifer Y Verma, Claudia Amar, et al., [2017] conducted a mixed-methods summative approach to improve care for advanced COPD through practice change relying on collated quantitative data, team documents, and surveys sent to core members of the 19 teams. Survey questions included a series of multiple-choice responses, Likert scale ratings, and open-ended questions. Collectively, the 19 teams have reached more than 1000 patients. Preliminary results (to be reported in detail later) suggest similar outcomes to the Halifax-based programs patients and families consistently report greater self-confidence in symptom management, returns to daily activities, and enjoyment of enhanced functional status. Similar to outcomes in Halifax, teams have also reported substantially fewer ED visits and hospitalizations (40–80%) among those enrolled.We present results relating to delivery of the collaborative under four subheadings: (i) the most significant achievements, cultural changes, and new work practices, (ii) team skills acquisition and improvement capability, (iii) the collaborative approach—the components of the INSPIRED QIC and related team feedback, and (iv) sustainability. Teams reported a number of gained QI skills, for example, 35/46 respondents (76%) indicated they became better able to "design innovative solutions (e.g. suite of COPD interventions, effective team-based care, etc.)", and the majority reported they became better equipped to develop benchmarks/targets for improvement (33/46, 76%), develop tools and processes to lead change in health-care improvement (33/46, 76%), and communicate improvement goals and outcomes to motivate staff to get and stay involved (32/45, 71%).[33]

SW Weldam, JJ Lammers., et al., [2016] conducted a mixed method study to explore the nurses' experiences with applying the new COPD-GRIP in Europe. Pre-intervention questionnaires were sent to all participating nurses (n=24) to identify expectations. Post-intervention questionnaires identified experiences after applying the intervention followed by two focused groups to further extend exploration of findings. Barriers were encountered, especially in patients with lower economic status, in patients with a lower health literacy and in patients with other cultural background. Nurses perceived the COPD-GRIP intervention as a feasible, individualized tool. According to the nurses, the intervention is a valuable improvement in the care for COPD patients.[34]

Hannah ML Young,Lindsay D Apps., et al., [2015] conducted a qualitative study toof nurses' and allied health professionals' perceptions of implementing self-management for patients with COPD. This study explores nurses' and AHPs' understanding and implementation of supported COPD self-management within routine clinical practice.Nurses and AHPs

participated in face-to-face semi-structured interviews to explore their understanding and provision of COPD self-management, as well as their perceptions of the challenges to providing such care. Purposive sampling was used to select participants from a range of professions working within primary, community, and secondary care settings. A total of 14 participants were interviewed. Nurses and AHPs viewed self-management as an important aspect of COPD care, but often misunderstood what it involved, leading to variation in practice. A number of challenges to supporting self-management were identified, which related to lack of time, lack of insight regarding training needs, and assumptions regarding patients' perceived self-management abilities.[35]

Catherine A O'Donnell, Hussein Jabareen, et al., [2010] conducted a cross sectional survey to identify workload, career intentions and the impact of professional isolation among practice nurses. This study aimed to describe that role, identify how professionally supported they felt and their career intentions. An additional aim was to explore whether they felt isolated and identify contributory factors. A cross-sectional questionnaire survey in one large urban Scottish Health Board, targeted all practice nurses (n = 329). There were 200 responses (61.0% response rate). Most respondents were aged 40 or over and were practice nurses for a median of 10 years. Commonest clinical activities were coronary heart disease management, cervical cytology, diabetes and the management of chronic obstructive pulmonary disease. Although most had a Personal Development Plan and a recent appraisal, 103 (52.3%) felt isolated at least sometimes; 30 (15.5%) intended leaving practice nursing within 5 years. Isolated nurses worked in practices with smaller list sizes ($p = 0.024$) and nursing teams ($p = 0.003$); were less likely to have someone they could discuss a clinical/professional ($p = 0.002$) or personal ($p < 0.001$) problem with; used their training and qualifications less ($p < 0.001$); had less productive appraisals ($p < 0.001$); and were less likely to intend staying in practice nursing ($p = 0.009$). Logistic regression analysis showed that nurses working alone or in teams of two were 6-fold and 3.5-fold more likely to feel isolated. Using qualifications and training to the full, having productive appraisals and planning to remain in practice nursing all mitigated against feeling isolated.[36]

Nicholas Zwar,Oshana Hermiz, et al., [2008] conducted a cluster randomised controlled trial of a cluster randomised controlled trial of nurse and GP partnership for care of Chronic Obstructive Pulmonary Disease. This randomised controlled trial aims at testing a new approach that involves a registered nurse working in partnership with patients, general practitioners (GPs) and other health professionals to provide care to patients according to the evidence-based clinical practice guidelines. The aim is to determine the impact of this partnership on the quality of care and patient outcomes.A cluster randomised control trial design was chosen for this study. Randomisation occurred at practice level. GPs practising in South Western Sydney, Australia and their COPD patients were recruited for the study.Data collection includes patient demographic profiles and their co-morbidities.At least 20 practices in each group and at least 10 patients per practice and that is at least 200 subjects in each group. The prevalence of COPD among general practice patients would be about 4.0%, slightly higher than population estimates. Assuming that there are 1,500 adult patients registered with each GP then would expect that there would be 60 patients with COPD. If a third of these patients would be eligible and consent to participate in the study, thus will recruit 20 patients per practice. Taking a conservative approach and assuming 10 patients consent per practice, then to achieve 400 patients will need to recruit 40 GP practices. As previously stated there are currently 785 GPs in 467 practices in SWS. Based on our previous experience of EPC evaluation where 71% of the GPs contacted took part in the research we expect to be able to recruit the numbers of GPs and practices needed for this efficacy trial.[37]

Jörgen Thorn, Maria Norrhall, et al., [2008] conducted aquestionnaire survey to assess the primary care management of chronic obstructive pulmonary disease (COPD) in relation to COPD guidelines in western Sweden. A postal questionnaire was sent out to all Primary Health Care Centres (PHCCs) in western Sweden (n=232). The response rate was 75%.A majority of the PHCCs had a nurse and physician responsible for COPD care. They used spirometry equipment regularly, but only 50% reported that they calibrated it at least weekly. Less than 30% of the PHCCs reported access to a dietician, occupational therapist or physiotherapist. There was a structured smoking cessation program in 50% of the PHCCs. Larger PHCCs were more likely to use spirometry equipment regularly and to have specific personnel for COPD care.There is a need to establish structured programs for COPD care including smoking cessation programs for COPD patients with special trained staff. Larger PHCCs have a better infrastructure for providing guideline-defined COPD care.[38]

**SECTION – C: REVIEWS REGARDING KNOWLEDGE AND PRACTICES OF COPD PREVENTION AND MANAGEMENT AMONG STAFF NURSES**

Mayhob Mona Mohamed [2018] conducted a descriptive study to assess nurses knowledge, practices and barriers affecting a safe administration of oxygen therapy. A purposeful sampling technique was used to recruit 50 nurses from different departments in one of the educational hospitals in Cairo. This study proved that only less than 10th and less than fifth of the studied sample has satisfactory level of knowledge and adequate practices, while, the rest were ranged between average and unsatisfactory. With regard to the common barriers affecting safe oxygen therapy reported by the nurses are unavailability of protocol, lack of maintenance of the equipment used for oxygen therapy, and incomplete unclear written prescription for oxygen therapy.54%, 58%, 80% and 50% sample has satisfactory level knowledge in relation to knowing aim of administering oxygen therapy, different methods used to assess oxygen saturation in the blood, precautions should be taken during administering oxygen therapy, and nursing interventions regarding administering oxygen therapy respectively.18% had adequate practices, 40% had average practices and 42% had inadequate practices. 64% nurses were lacking knowledge, 68% were lacking awareness, 86% were lacking training courses. This study concluded that, a minority of the studied sample unsatisfactory level of knowledge and less than fifth had adequate level of practices. The most common reported barriers; absence of protocol for oxygen therapy could be followed, and unavailability of well-functioning equipment.[39]

MahranGhada, Radwan Marwan., et al., [2018] conducted a comparative study of critical nurses' knowledge and practice before and after education program about acute exacerbation of COPD in Egypt. The aim of this study is to evaluate nurses' knowledge and practice before and after education program about AECOPD. 60 nurses were divided into two groups (30 registered nurses and 30 internship nurses). Before the education program both groups had lower knowledge about AECOPD as clinical manifestations, diagnosis, nursing management and rehabilitation. But after the education program, internship nurses had higher knowledge about previous mentioned items (83.33%), (93.33%) and (80%) than registered nurses (26.66%), (66.66%) and (66.66%). Also patients assigned to the internship nurses group after the education program had lower dyspnoea level (0.87 + 0.97) than those assigned nurses' group (1.67 + 1.24) which means higher performance of internship nurses than registered nurses. CCN's and internship needs continuing education and training about the various critical cases as AECOPD to strengthen their role to plan and deliver more strategies to improve the quality of life of AECOPD patients.[40]

## 3. METHODOLOGY

Research methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.**(Kara, Helen (2015)**

Research methodology refers to the methods that are used in research for gathering and analyzing the data. The methodology is the most important part of the research as it is the framework for conducting the study. It indicates the general pattern for organizing the procedures together valid and reliable data for the investigations.

The chapter includes:-

- Research Approach
- Research Design
- Research setting
- Target Population
- Sample Size & Sampling technique
- Variables
- Criteria Measures: Inclusion and exclusion criteria
- Development & description of the tools
- Validity of the tool
- Pilot study
- Reliability of the tool
- Ethical consideration
- Data collection procedure
- Plan for data analysis
- Summary

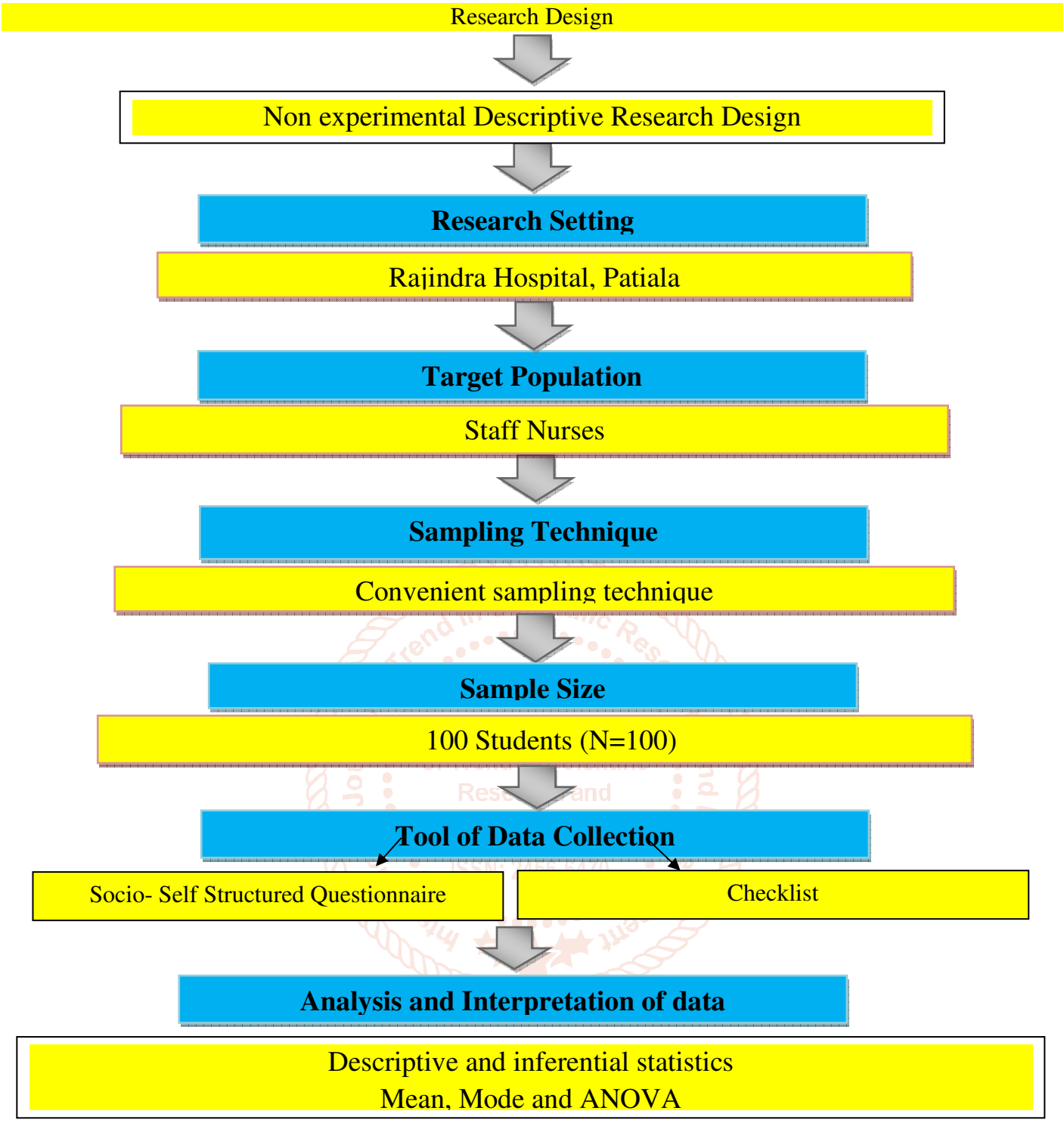


**Figure 1 Schematic Representation of Research Methodology**

**RESEARCH APPROACH:**

A quantitative research approach is used for the present study to assess the knowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala. This approach is an experimental approach which will be conducted by conducting an experiment on sample.

**RESEARCH DESIGN:**

The term research design is defined as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of findings **(Burns and Grove 2003).**

Descriptive research design is used to conduct this study. The design is best suited to assess the knowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala.

**RESEARCH SETTING:**

Setting is the physical location and condition in which the data takes place in a study "as said by **Polit and Hungler"**. The criterion for selection of this setting is feasibility of conducting study in the setting and investigators familiarity with the setting and people.

The study is conducted in the selected Hospital i.e., Rajindra Hospital, Patiala, Punjab. The total nurses in hospital are around 500. This setting is selected due to flexibility for conducting study and expected cooperation from the sample. This setting was easy to conduct study for the researcher and was very convenient for him to conduct study.

**TARGET POPULATION:**

**Polit and Hungler (1991)** described "population as the entire set of individuals having some common characteristics".

Staff nurses of Rajindra Hospital, Patiala, Punjab. Only the convenient staff was taken as a sample. There were many who were absent and were limited for my study. Only 100 staff nurses were the target population.

**SAMPLE SIZE AND SAMPLING TECHNIQUE:-**

**Polit and Hungler** said, "sample is a subject of population selected to participate in a research study".

**S.K Sharma, 2011** said that "Sample consists of subsets of units which comprise the population selected by investigators or researcher to participate in their research project".

100 staff nurses of Rajindra Hospital, Patiala, Punjab are taken to assess the knowledge and practices regarding COPD prevention and management which was selected through the convenient sampling technique. Through this sampling technique, researcher selected only those staff nurses which were present at the time of study.

**VARIABLES UNDER STUDY:**

Demographic Variables: - Age, gender, marital status, professional qualification or education, attended any COPD patient, previous rotation in respiratory wards, any experience.These all were Socio-demographic variables.

Research Variables: - knowledge and practices regarding COPD prevention and management. It includes various types of questions regarding COPD. Also along with checklist for assessing practices.

**INCLUSION CRITERIA AND EXLUSION CRITERIA:**

**INCLUSION CRITERIA:**

Staff nurses who were:

1. Working in Rajindra Hospital, Patiala, Punjab.
2. Interested to participate in study.
3. Present at the time of data collection.

**EXCLUSION CRITERIA:**

Staff nurses who were:

1. Working in blood bank, ortho unit, pediatric unit, neuro unit, nephro unit etc.
2. Staff who were absent on the day when study was conducted.

**DESCRIPTION OF TOOL:**

Self-structured tool (Questionnaire and Checklist) is use for the assessment ofknowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala. The tool contains 2 parts:

Part 1: Demographic variables: - this part of tool contains items which include Age, professional qualificationor education, attended any COPD patient, previous rotation in respiratory wards, any experience.

Part 2: knowledge and practices regarding COPD prevention and management

This part contains 2 sections:

Section 1: consists of knowledge which contain full form, definition, causes and risk factors, clinical manifestations, characteristic sign, cardinal sign, overall treatment, whether medical, surgical as well as nursing and prevention and many other questions related to COPD.

Section 2: consists of practices regarding COPD prevention and management assessment which contain hand washing, proper medication, and knowledge regarding medicines, oxygen therapies, diagnostic tests (spirometry etc.), infection control techniques, inhalation techniques, and therapeutic outcomes, respiratory status etc.

**VALIDITY OF TOOL:**

**Polit and Beck (2008)** state that validity is the degree to which an instrument measures what it is supposed to measure.

The tool used for the study was self-structured questionnaire and checklist schedule however to get the opinions of the different experts for suitability and for validation of demographic variables for COPD prevention and management, it was given to experts of different specialty. The experts were from the community department, medical department, and surgical department. The final tool was prepared for further use in the research study. All of the experts gave their views on tool validation and corrected errors.

**PILOT STUDY:**

**Polit and Beck (2012)** state that a pilot study is a small- scale version or trial run designed to test the methods to be used in a larger, more rigorous study. Data from Pilot testing intervention can shed light on a number of things including the acceptability of the intervention to intended beneficiaries, intervention agent, the adequacy, comprehensiveness and clarity of intervention protocol, the appropriateness of the intervention, the extent to which intervention fidelity can be maintained, the rate of retention in intervention and safety of the intervention. The outcomes of Pilot study provide invaluable lessons that can inform subsequent efforts to generate valid evidence for nursing practice.

Pilot study was conducted in the date 20 may, 2021 to check the feasibility and reliability of the study. It was conducted in the AP Jain Hospital of district Patiala, Punjab. The permission was taken from the SMO to conduct the pilot study. 10 sample were selected for pilot study. The study was conducted to assess the knowledge and practices regarding COPD prevention and management among staff nurses. At the end, study was feasible and practicable to conduct the main study.

**RELIABILITY OF TOOL:**

The reliability of an instrument is a major criterion for assessing its quality and adequacy. It is the ability of the data gathering device to obtain consistent result.

**Polit and Beck (2011**) state that the reliability of an instrument is the degree of consistency with which it measures the attributes it is supposed to be measuring.

The reliability of the tool was established by split half method. The tool was found to be highly reliable. Reliability of knowledge is 0.82 and practices is 0.94.

$$\frac{\sum(x-\bar{x})\ \sum(y-\bar{y})}{\sqrt{\sum(x-\bar{x})2\sum(\bar{y}-y)2}}$$

The tool was found to be reliable after conducting pilot study. The reliability of knowledge is 0.82 and practices is 0.94, assessed through Karl Pearson's Coefficient.

**ETHICAL CONSIDERATION:**

The main study was approved by the researcher and ethical committee. The written permission was taken from the Rajindra Hospital and the study subjects. The study subjects were explained about the objectives of the study, method of data collection and duration of study. The subjects were given the full autonomy to withdraw themselves from the study anytime. Confidentiality of subjects was maintained and data was used only for research purpose. This is the main part of the study that is to be kept in view. Confidentiality is main key to the conducting of study.

**PROCEDURE OF DATA COLLECTION:**

The main study was conducted after formal permission from the 10 June 2021 till 20 June 2021 and study subjects. The study was conducted on date 20 June 2021. The survey of the hospital was done to assess the knowledge and practices regarding COPD prevention and management among staff nurses of district Patiala.

Questionnaireand checklist schedule were used to collect data. The subjects were assured anonymity and confidentiality of the information provided by them and informed by them and informed consent was obtained. As I need 100 samples, so I took 100 samples from selected hospital, Patiala. Whole data was filled by the sample itself.

Target population of pilot study was at A.P Jain Hospital and during main study it was Rajindra Hospital, Patiala. This was done to prevent biasness and errors in result. Permission was taken from both the hospitals to keep the study in flow of order ad to reduce errors. A formal letter written permission was taken from our own principal of college to grant permission to conduct data collection.

It took 10 days to collect data so as it was according to my convenience regarding time and also due to shifts of staff nurses and to reduce biasness to prevent similarity of same staff on next day too.

**PLAN OF DATA ANALYSIS:**

Data analysis is the process of systematically applying statistical and logical techniques to describes and illustrate, condense and recap, and evaluate data. The investigator planned to analyses the data on the basis of the objectives and the assumptions of study. The obtained was analyzed in the following ways:

1. Data was organized in the master data sheet.
2. Analysis of data was done on the basis of objectives of the study.
3. Computation of frequencies and percentage for the analysis of socio demographic variables.
4. ANNOVA test was used to determine association between knowledge and practices regarding management and prevention of staff nurses,

The data was analyzed by using the descriptive and inferential statistics such as frequency percentage and chi square. The level of significance chosen was P>0.05.

**SUMMARY: -**

This chapter deals with the research approach and research design, research setting, target population, sample and sampling technique, inclusion and exclusion criteria, selection and description of tool, validity of tool, pilot study, reliability of tool, ethical consideration, procedure of data collection, plan of data analysis of the study. There was no any other difficulty faced by the research except the timing problem of the researcher while collecting data. As it was very problematic for one to collect data of the sample who are on three different shifts (morning, evening and night). But anyhow, researcher collected the data overcoming those diificulties.

## 4. ANALYSIS AND INTERPRETATION OF DATA

Analysis and interpretation of data is the most important phase of research process, which involves the Computation of certain measures along with searching for patterns of relationship that exist among the data group. Data collection is followed by analysis and interpretation of data in accordance with study objectives.

**S.K SHARMA (2011)** defines analysis as a process of systematically applying statistical and logical techniques to describe, summarize and compare data.

**OBJECTIVES**

1. To assess the knowledge regarding COPD prevention and management among staff nurses.
2. To determine the practices of COPD prevention and management among staff nurses.
3. To compare the knowledge and practices regarding COPD prevention and management among staff nurses.
4. To find out the association of knowledge regarding COPD prevention and management with selected demographic variables among staff nurses.
5. To provide pamphlet regarding COPD prevention and management among staff nurses.

**ORGANIZATION OF STUDY FINDINGS**

**Section A: -** Description of Demographic data.
**Section B:**- Determination of practices of COPD prevention ad management among staff nurses.
**Section C: -**Comparison of knowledge and practices regarding COPD prevention and management among staff nurses.
**Section D: -**Association of knowledge regarding COPD prevention and management with selected demographic variables among staff nurses.

**SECTION A**
**DESCRIPTION OF DEMOGRAPHIC DATA**

The section describes the demographic characteristics ofstaff nurses of selected hospital of district Patiala regarding management and practices of COPD under the study. The demographic characteristics are described in terms of Age, Gender, marital status, professional qualification or education, attended any COPD patient, previous rotation in respiratory wards, any experience.

Frequency and percentage distribution of Demographic characteristics are computed for describing the sample characteristics. These findings are presented in table-

N=100

| Sr. No. | Demographical Variables | Frequency | % |
|---|---|---|---|
| 1 | **AGE** | | |
| | 22-30 | 89 | 89 |
| | 31-39 | 11 | 11 |
| | 41-49 | 0 | 0 |
| | 50 and above | 0 | 0 |
| **2** | **GENDER** | | |
| | Male | 12 | 12 |
| | Female | 88 | 88 |
| **3** | **MARITAL STATUS** | | |
| | Married | 24 | 24 |
| | Unmarried | 76 | 76 |
| | Divorced | 0 | 0 |
| | Widowed | | |
| **4** | **PROFESSIONAL QUALIFICATION OR EDUCATION** | | |
| | GNM | 19 | 19 |
| | B.Sc. Nursing | 65 | 65 |
| | Post Basic B.Sc. Nursing | 8 | 8 |
| | M.Sc. Nursing | 8 | 8 |
| **5** | **ATTENDED ANY COPD PATIENT** | | |
| | Yes | 67 | 67 |
| | No | 33 | 33 |
| **6** | **PREVIOUS ROTATION IN RESPIRATORY WARDS** | | |
| | Yes | 54 | 54 |
| | No | 46 | 46 |
| **7** | **EXPERIENCE IF ANY** | | |
| | 1 | 29 | 29 |
| | 2 | 36 | 36 |
| | 4 | 9 | 9 |
| | 4 or more | 9 | 9 |

Data presented in Table 1 depicts the sample characteristics in frequency and percentage distribution of staff nurses that was age, gender, marital status, professional qualification, attended any COPD patient, previous rotation in respiratory wards, experience if any.
According to age, 89% were in the age group of 22-30, 11% in the age group of 31-39 and (0%) in both 40-49 and more than 50.

According to gender, 88% were females and 12% were males.

According to marital status 76% were unmarried and 24% were married and (0%) were divorced and widowed.

According to professional qualification or education, 65% were B.Sc. Nursing, 19% were GNM, 8% were Post Basic B.Sc. Nursing and 8% were M.Sc. Nursing.

Regarding attended any COPD patient, 67% attended COPD patient and 33% did not attended any COPD patient.

According to previous rotation in respiratory wards, 54%) have been previously rotation in respiratory wards and 46% have not been previously rotation in respiratory wards.

According to experience, 36% had experience for 2 years, 29% had experience for 1 year, 9% for 4 and 9% for 4 or more.

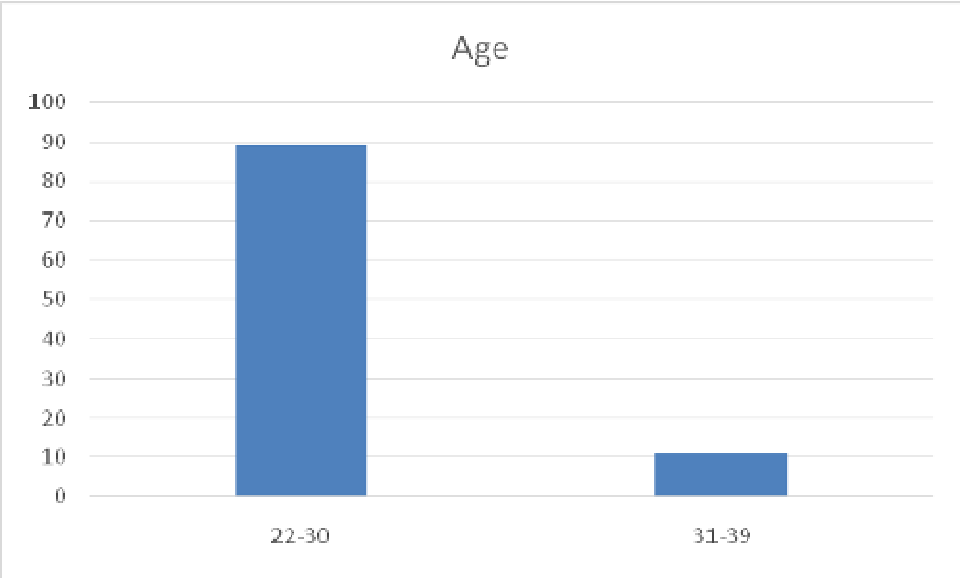


**Fig. 1 Bar graph representing demographic variable age of staff nurses**

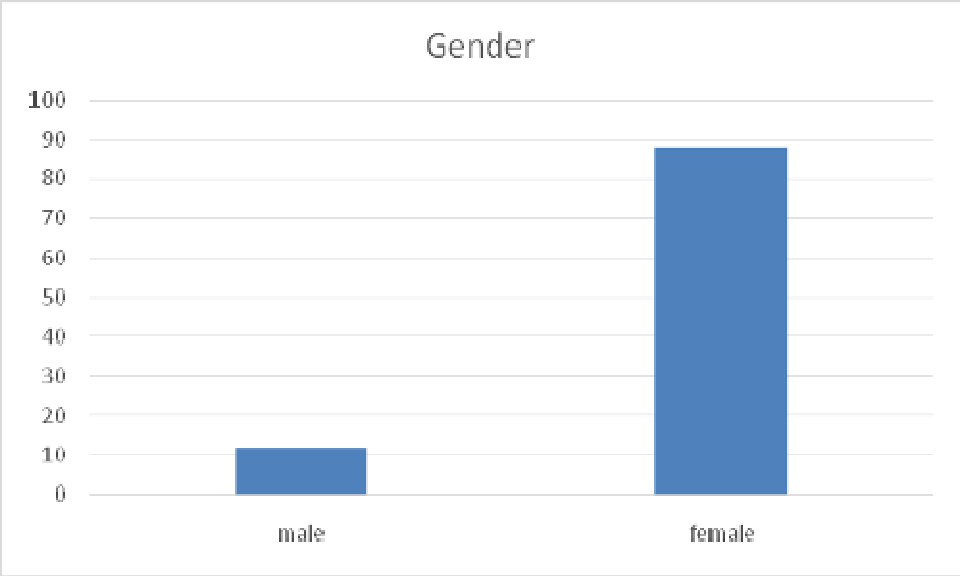


**Fig. 2 Bar graph representing demographic variable gender of staff nurses**

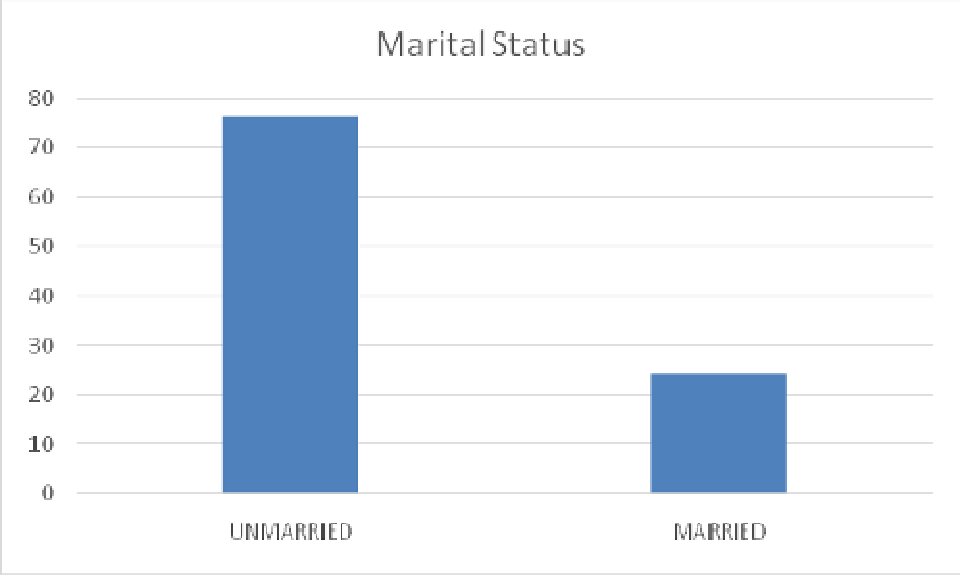


**Fig. 3 Bar graph representing demographic variable marital status of staff nurses**

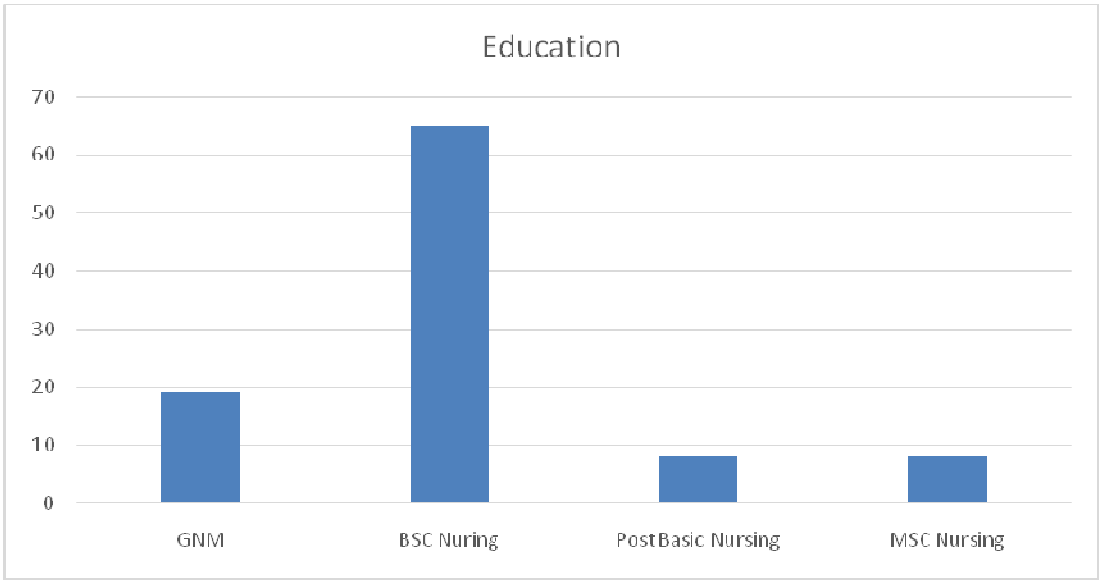


**Fig. 4 Bar graph representing demographic variable education of staff nurses**

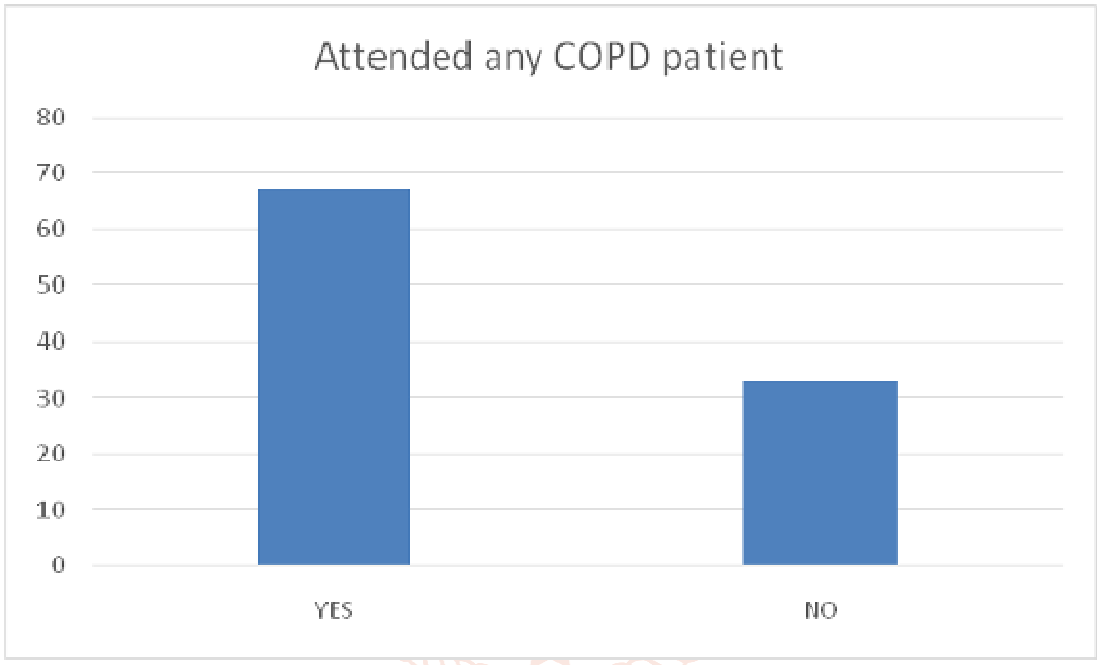


**Fig. 5 Bar graph representing demographic variable attended any COPD patient of staff nurses**

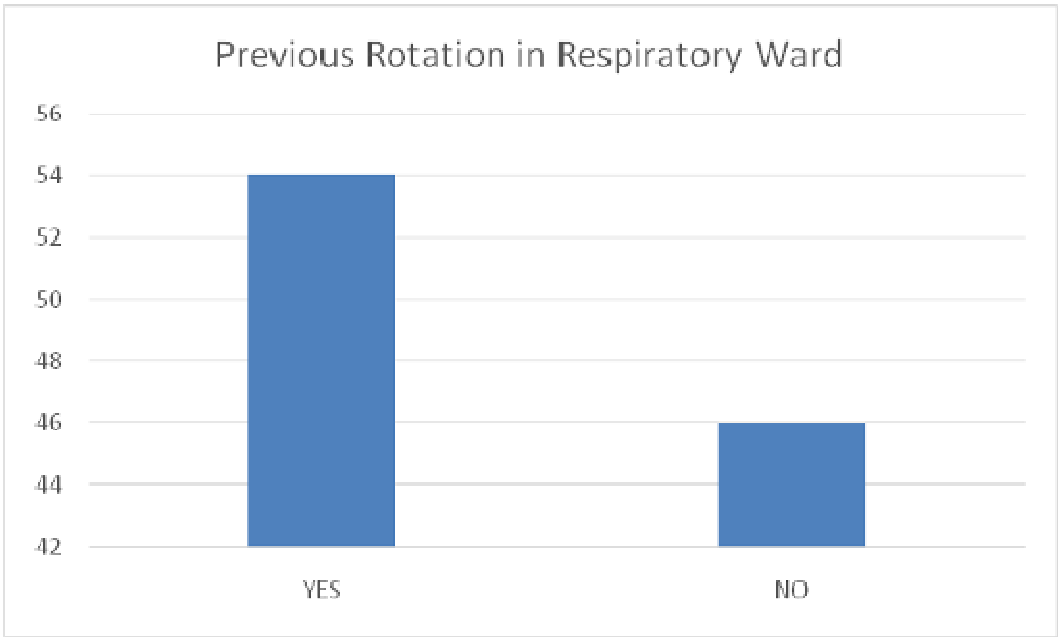


**Fig. 6 Bar graph representing demographic variable previous rotation in respiratory ward of staff nurses**

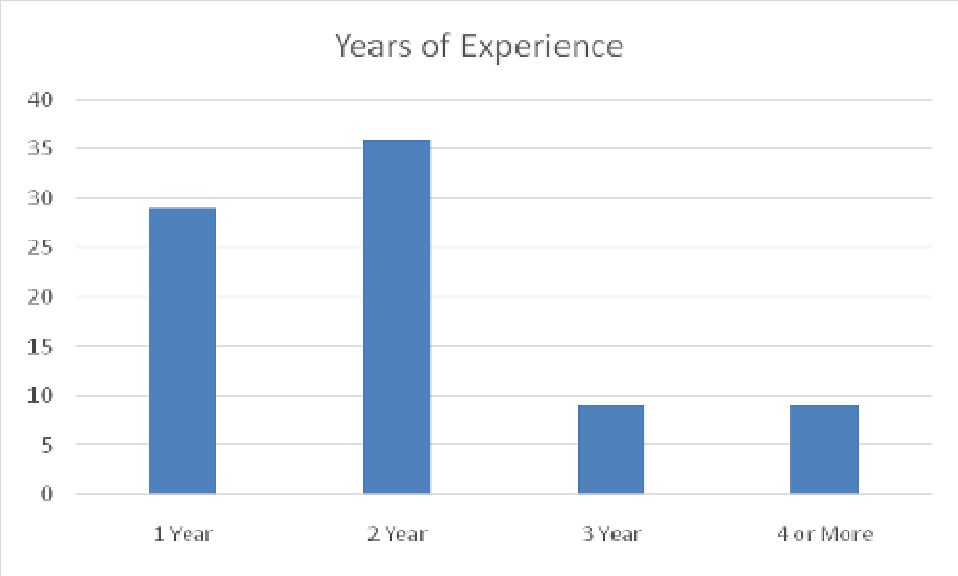


**Fig. 7 Bar graph representing demographic variable years of experience of staff nurses**

**SECTION B**

**DETERMINATION OF PRACTICES OF COPD PREVENTION AD MANAGEMENT AMONG STAFF NURSES**

The section describes the findings related to determination of practices of COPD prevention and management among staff nurses of selected hospital of district Patiala. One way ANOVA test was used to determine the practices among staff nurses.

**N=100**

| Age | n | Mean | SD |
|---|---|---|---|
| 22-30 | 90 | 71.30 | 28.206 |
| 31-39 | 8 | 68.00 | 39.652 |
| 41-49 | 1 | 38.00 | 29.098 |
| 50 and above | 0 | 0 | 0 |

**Table 2: Representing data of practices among sociodemographic variable i.e. age.**

The data presented in the table shows that socio-demographic variable age 22-30, total were 90, mean was 71.30, standard deviation was 28.206. Between age group 31-39, there were 8, mean was 68.00, standard deviation was 39.652. between age group 41-49, there were 1 only, mean was 38.00 and standard deviation was 29.098.

**N=100**

| GENDER | n | Mean | SD |
|---|---|---|---|
| Male | 12 | 66.50 | 29.306 |
| Female | 88 | 71.28 | 29.192 |

**Table 3: Representing data of practices among sociodemographic variable i.e. gender.**

The data presented in the table shows that sociodemographic variable, gender, total number of males were 12, its mean was 66.50, standard deviation was 29.306. total number of females were 88, its mean was 71.28, standard deviation was 29.192.

**N=100**

| MARITAL STATUS | n | Mean | SD |
|---|---|---|---|
| Married | 25 | 68.21 | 20.705 |
| Unmarried | 75 | 71.49 | 31.391 |
| Divorced | 0 | 0 | 0 |
| Widowed | 0 | 0 | 0 |

**Table 4: Representing data of practices among sociodemographic variable i.e. marital status.**

The data presented in the table shows that sociodemographic variable, marital status, married were 25, its mean was 68.21, standard deviation was 20.705. unmarried were 75, its mean was 71.49, standard deviation was 31.391. there were no divorced and widowed among 100 samples.

N= 100

| PROFESSIONAL QUALIFICATION OR EDUCATION | n | Mean | SD |
|---|---|---|---|
| GNM | 19 | 69.84 | 32.796 |
| B.Sc. nursing | 64 | 75.60 | 29.567 |
| Post basic B.Sc. nursing | 8 | 50.38 | 13.575 |
| M.Sc. Nursing | 9 | 56.22 | 13.255 |

**Table 5: Representing data of practices among sociodemographic variable i.e. professional qualification or education**

The data presented in the table shows that the sociodemographic variable professional qualification or education. 19 staff nurses were GNM qualified, mean was 69.84 and standard deviation was 32.796. 64 staff nurses were B.Sc. Nursing qualified, its mean was 75.60 and standard deviation was 29.567. 8 staff nurses were post basic B.Sc. Nursing qualified, its mean was 50.38, and standard deviation was 13.575. 9 staff nurses were M.Sc. Nursing qualified, its mean was 56.22 and standard deviation was 13.255.

N=100

| ATTENDED ANY COPD PATIENT | n | Mean | SD |
|---|---|---|---|
| Yes | 68 | 68.07 | 28.143 |
| No | 32 | 76.19 | 30.731 |

**Table 6: Representing data of practices among sociodemographic variable i.e. attended any COPD patient.**

The data presented in the table shows that sociodemographic variable i.e. attended any COPD patient, staff nurses who attended COPD patient were 68, mean was 68.07, standard deviation was 28.143. Staff nurses who did not attended any COPD patient were 32, its mean was 76.19, standard deviation was 30.731.

N=100

| PREVIOUS ROTATION IN RESPIRATORY WARDS | N | Mean | SD |
|---|---|---|---|
| Yes | 60 | 60.06 | 30.345 |
| No | 40 | 58.87 | 39.298 |

**Table 7: representing the data of practices among sociodemographic variable i.e. previous rotation in respiratory wards.**

The data presented in the table shows that sociodemographic variable i.e. previous rotation in respiratory wards, there were total 60 staff nurses who previously rotated in respiratory wards, mean was 60.06 and standard deviation was 30.345. there were 40 staff nurses who did not previously rotated in respiratory wards, its mean was 58.87, standard deviation was 39.298.

N=100

| YEARS OF EXPERENCE IN RESPIRATORY WARDS | N | Mean | SD |
|---|---|---|---|
| 1 | 35 | 63.45 | 9.123 |
| 2 | 44 | 62.32 | 12.362 |
| 3 | 10 | 69.12 | 7.731 |
| 4 or more | 11 | 65.21 | 8.186 |

**Table 8: representing the data of practices among sociodemographic variable i.e. years of experience in respiratory wards.**

The data presented in the table shows that socio demographic variable i.e. years of experience in respiratory wards, staff nurses who had 1 year of experience were 35, its mean was 63.45, standard deviation was to 9.123. Staff nurses who had 2 years of experience were 44, its mean was 62.32 and standard deviation was 12.362. Staff nurses who had 3 years of experience were 44, its mean was 69.12 and standard deviation was 7.731. Staff nurses who had 4 years of experience or more were 11, its mean was 65.21 and standard deviation was 8.186.

**SECTION C**

**COMPARISON OF KNOWLEDGE AND PRACTICES REGARDING COPD PREVENTION AND MANAGEMENT AMONG STAFF NURSES.**

This section describes the Comparison of knowledge and practices regarding COPD prevention and management among staff nurses of selected hospital of district Patiala.

Frequency and percentage distribution of criteria measurement to assess the knowledge and practices of staff nurses is computed for describing sample characteristics. The findings are present in Table 2

**Objective 1: -**To assess the level of knowledge among staff nurses of selected hospital of district Patiala.

**N=100**

| Level of Knowledge | Frequency(f) | Percentage (%) |
|---|---|---|
| Excellent | 5 | 5% |
| Good | 86 | 86% |
| Average | 9 | 9% |
| Below average | 0 | 0% |

**Table 9: Level of knowledge among Staff nurses**

**Objective 2: -** To assess the level of practices among staff nurses of selected hospital of district Patiala.

**N=100**

| Checklist | Frequency(f) | Percentage (%) |
|---|---|---|
| Good practice | 93 | 93% |
| Poor skills | 7 | 7% |

**Table10: Level of practices among staff nurses**

Table 2 Illustrate that out of 100 staff nurses 5% have excellent knowledge regarding COPD, 86% have good knowledge, 9% have average knowledge and 0% have below average regarding COPD management.

Table 3 depicts that 93% staff nurses have good practicing skills and 7% have poor skills regarding management and practices of COPD.

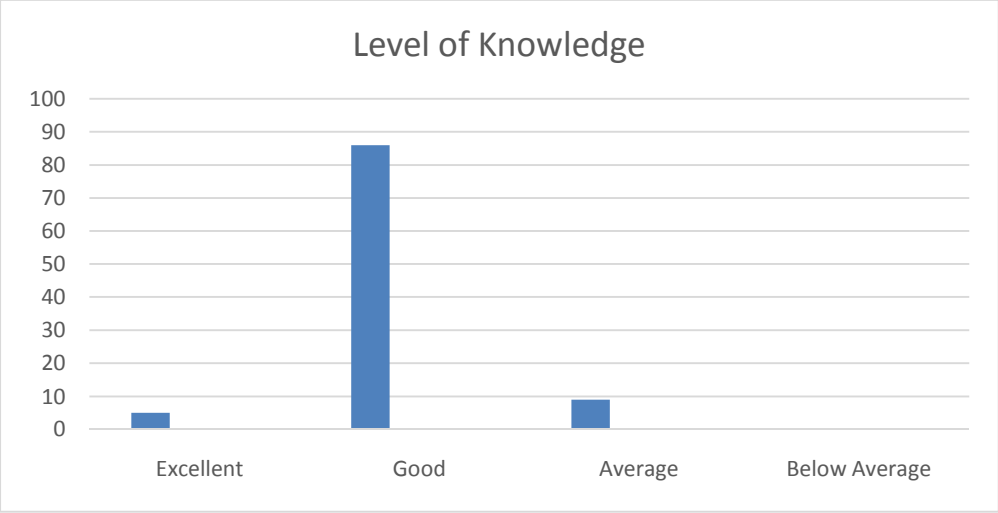


**Fig: 8 showing levels of knowledge**

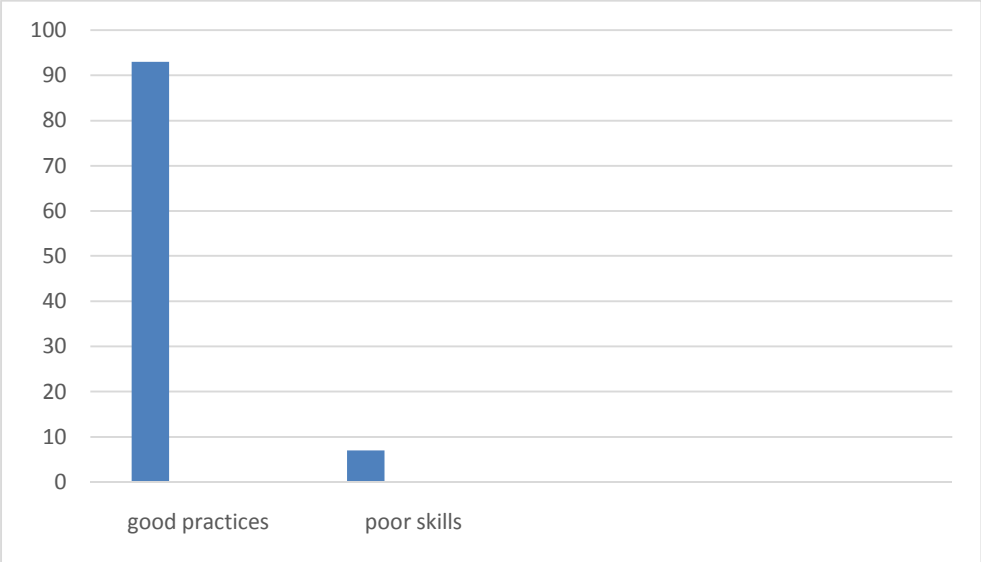


**Fig 9: showing level of practices**

**N=100**

| Descriptive Statistics | Mean | Median | S. D | Maximum | Minimum | Range |
|---|---|---|---|---|---|---|
| Knowledge | 64.64 | 65.0 | 9.853 | 103 | 34 | 69 |

**Table 11: Showing Descriptive Statistics**

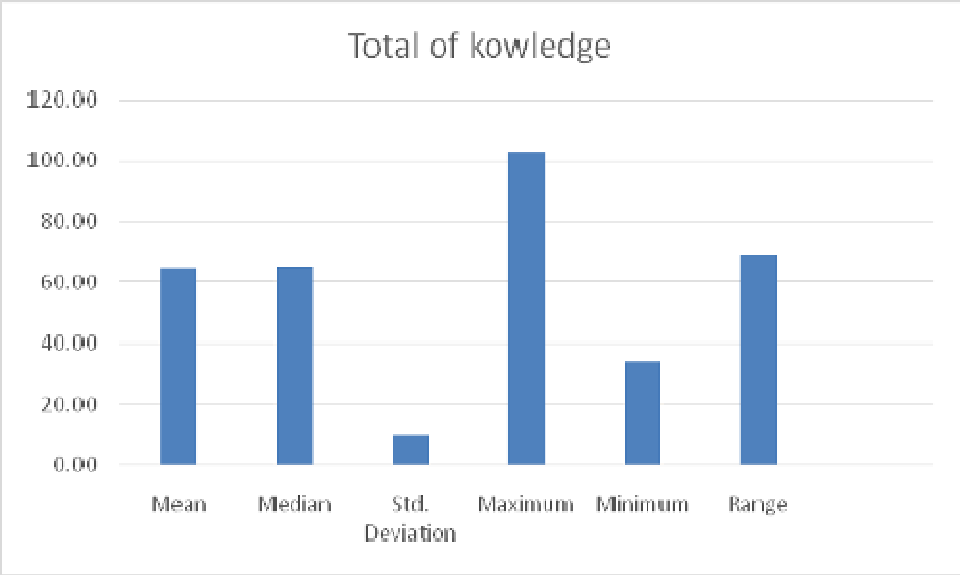


**Fig:10 Showing Descriptive Statisctics**

Table 4 and Fig:12 showing Descriptive Statistics. This showed that median score was 65.0 followed by mean score was 64.64, Moreover, S.D score was only 9.853.

| | n | mean | Standard deviation | Standard error mean |
|---|---|---|---|---|
| Total of practices | 100 | 71.23 | 29.437 | 2.944 |
| Total of knowledge | 100 | 64.64 | 9.853 | 0.985 |

**Table 12: showing one sample statistics**

Table 5 shows one sample statistics. Mean of knowledge was 64.64 and mean of practice is 71.23.

**Test value = 0**

| | t | df | Sig. (2-tailed) | Mean difference | 95% confidence interval of the difference | |
|---|---|---|---|---|---|---|
| | | | | | lower | upper |
| Total of practices | 24.197 | 99 | 0.000 | 71.230 | 65.39 | 77.07 |
| Total of knowledge | 65.605 | 99 | 0.000 | 64.640 | 62.68 | 66.60 |

**Table 13: showing one sample test**

Table 6 depicts one sample test (the mean difference between both knowledge and practices) by applying t test formula. Mean difference of practice is 71.230 and knowledge is 64.640. T test value for practice is 24.197 and t test for knowledge is 65.605.

**SECTION D ASSOCIATION OF KNOWLEDGE WITH SELECTED DEMOGRAPHIC VARIABLES.**
This section deals with the findings related to association between the knowledge with selected demographic variables. The One-Way ANOVA test was used to determine the association between the level of knowledge with selected demographic variables. The One-Way ANOVA values showing the association between level of knowledge with their demographic variables of Staff nurses.

**Objective 1:** To find out the association between knowledge with their selected demographic variables.

**N=100**

| Age | n | Mean | SD | df | F |
|---|---|---|---|---|---|
| 22-30 | 90 | 64.82 | 9.761 | 96 | (0.704)* |
| 31-39 | 8 | 62.00 | 12.306 | | |
| 41-49 | 1 | 68.00 | 9.908 | | |
| 50 and above | 0 | 0 | 0 | | |

**Table No 14: Represent Association between age and knowledge among the staff nurses**

The data presented in the table 7 shows that socio-demographic variable age 22-30, total were 90, mean was 64.82, standard deviation was 9.761. Between age group 31-39, there were 8, mean was 62-00, standard deviation was 12.306. between age group 41-49, there were 1 only, mean was 68.00 and standard deviation was 9.908. Age group 50 and above, there were 0. The degree of freedom of socio demographic variable age was 96. The sample of 100 staff nurses in which the association between demographic variable of age and knowledge is significant by 0.704.

**N= 100**

| GENDER | n | Mean | SD | Df | F |
|---|---|---|---|---|---|
| Male | 12 | 65.17 | 11.519 | 97 | (0.863)* |
| Female | 88 | 64.55 | 9.732 | | |

**Table No 15: Represent Association between gender and knowledge among the staff nurses.**

The data presented in the table 8 shows that sociodemographic variable, gender, total number of males were 12, its mean was 65.17, standard deviation was 11.519. total number of females were 88, its mean was 64.55, standard deviation was 9.732. The degree of freedom of sociodemographic variable gender was 97. The sample of 100 staff nurses in which the association between demographic variable of gender and knowledge is significant by 0.863.

**N=100**

| MARITAL STATUS | n | Mean | SD | DF | F |
|---|---|---|---|---|---|
| Married | 25 | 60.42 | 10.073 | 97 | NS (0.022) |
| Unmarried | 75 | 65.97 | 9.525 | | |
| Divorced | 0 | 0 | 0 | | |
| Widowed | 0 | 0 | 0 | | |

**Table No 16: Represent Association between marital status and knowledge among the staff nurses.**

The data presented in the table 9 shows that sociodemographic variable, marital status, married were 25, its mean was 60.42, standard deviation was 10.073. unmarried were 75, its mean was 65.97, standard deviation was 9.525. there were no divorced and widowed among 100 samples. The degree of freedom of socio demographic variable marital status was 97.The sample of 100 staff nurses in which the association between demographic variable of marital and knowledge is not significant by 0.627.

**N= 100**

| PROFESSIONAL QUALIFICATION OR EDUCATION | n | Mean | SD | df | F |
|---|---|---|---|---|---|
| GNM | 19 | 65.89 | 7.564 | 95 | (0.627)* |
| B.Sc. nursing | 64 | 64.03 | 10.374 | | |
| Post basic B.Sc. nursing | 8 | 62.63 | 13.742 | | |
| M.Sc. Nursing | 9 | 67.89 | 7.114 | | |

**Table No 17: Represent Association between professional qualification or education and knowledge among the staff nurses.**

The data presented in the table 10 shows that the sociodemographic variable professional qualification or education. 19 staff nurses were GNM qualified, mean was 65.89 and standard deviation was 7.564. 64 staff nurses were B.Sc. Nursing qualified, its mean was 64.03 and standard deviation was 10.374. 8 staff nurses were post basic B.Sc. Nursing qualified, its mean was 63.63, and standard deviation was 13.742. 9 staff nurses were M.Sc. Nursing qualified, its mean was 67.89 and standard deviation was 7.114. the degree of freedom of socio demographic variable professional Qualification or education was 95. The sample of 100 staff nurses in which the association between demographic variable of professional qualification and knowledge is significant by 0.627.

**N=100**

| ATTENDED ANY COPD PATIENT | n | Mean | SD | df | F |
|---|---|---|---|---|---|
| Yes | 68 | 65.13 | 7.750 | 97 | (0.542)* |
| No | 32 | 63.56 | 13.431 | | |

**Table No 18: Represent Association between attended any COPD patient and knowledge among the staff nurses.**

The data presented in the table 11 shows that sociodemographic variable i.e. attended any COPD patient, staff nurses who attended COPD patient were 68, mean was 65.13, standard deviation was 7.750. Staff nurses who did not attended any COPD patient were 32, its mean was 63.56, standard deviation was 13.431. The degree of freedom of socio demographic variable i.e. attended any COPD patient is 97. The sample of 100 staff nurses in which the association between demographic variable of attended any COPD patient and knowledge is significant by 0.542.

**N=100**

| PREVIOUS ROTATION IN RESPIRATORY WARDS | N | Mean | SD | df | F |
|---|---|---|---|---|---|
| Yes | 60 | 65.35 | 9.433 | 98 | NS (0.391) |
| No | 40 | 63.58 | 10.843 | | |

**Table No 19: Represent Association between previous rotation in respiratory wards and knowledge among the staff nurses.**

The data presented in the table 12 shows that sociodemographic variable i.e. previous rotation in respiratory wards, there were total 60 staff nurses who previously rotated in respiratory wards, mean was 65.35 and standard deviation was 9.433. there were 40 staff nurses who did not previously rotated in respiratory wards, its mean was 63.58, standard deviation was 10.843. The degree of freedom of sociodemographic variable i.e. previous rotation in respiratory wards is 98. The sample of 100 staff nurses in which the association between demographic variable of previous rotation in respiratory wards and knowledge is not significant by 0.391.

**N=100**

| YEARS OF EXPERENCE IN RESPIRATORY WARDS | N | Mean | SD | df | F |
|---|---|---|---|---|---|
| 1 | 35 | 62.74 | 8.856 | 96 | NS (0.267) |
| 2 | 44 | 65.27 | 11.382 | | |
| 3 | 10 | 64.30 | 8.731 | | |
| 4 or more | 11 | 68.45 | 6.186 | | |

**Table No 20: Represent Association between years of experience in respiratory wards and knowledge among the staff nurses.**

The data presented in the table 13 shows that socio demographic variable i.e. years of experience in respiratory wards, staff nurses who had 1 year of experience were 35, its mean was 62.74, standard deviation was to 8.856. Staff nurses who had 2 years of experience were 44, its mean was 65.27 and standard deviation was 11.382. Staff nurses who had 3 years of experience were 44, its mean was 65.27 and standard deviation was 8.731. Staff nurses who had 4 years of experience or more were 11, its mean was 68.45 and standard deviation was 6.186. The degree of freedom was 96. The sample of 100 staff nurses in which the association between demographic variable of years of experience in respiratory wards and knowledge is not significant by 0.267.

**SUMMARY**

This chapter deals with the frequency and percentage table and graphs representing the Knowledge with selected demographic variables of staff nurses working in Rajindra Hospital, Patiala,Punjab. A One-Way ANOVA test was done to determine the association between knowledge with their selected Demographic variables. This chapter shows that how many socio-demographic variable are significant and how many are non-significant. It also shows comparison of knowledge and practices. All the data of this chapter is further compared with review of literature in next chapter. It shows graphical representation of all data. It includes many tables and graphs which shows simplified data of total sample of staff nurses i.e 100.

## 5. DISCUSSION

In this section, the investigator discussed the results of the study, the results and discussion of the study ae the research opportunity to examine the methods and analysis.

The findings of the study have been discussed in accordance with the objectives of research and literature reviewed.

**OBJECTIVE 1: To assess the knowledge regarding COPD prevention and management among staff nurses.** It was found that the selected staff nurses in selected hospital were 100. Level of knowledge was calculated in the form of excellent, good, average, below average. 5% staff nurses were excellent, 86% were good, 9% were at average and 0% at below average. The above findings were in compliance with the findings of GöktalayTuğba, Tuncal Ayşe Nur., et al.,[36] [2015] who conducted a cross-sectional study to determine knowledge level of the health care providers about COPD and PR in Manisa city. 65.5% of the health care providers

responded to the survey. Rate of those correctly knowing at least one of four items was 97.2%. No responder knew all items correctly. Average value for correct answers was 5.30 ± 2.1 (range; 1-10).

**OBJECTIVE 2: To determine the practices of COPD prevention and management among staff nurses.**It was found that practices of COPD prevention and management among staff nurses was divided among good practices and poor skills. 7% had good skills and **93**% had poor skills. The above findings were in compliance with the findings of Mayhob Mona Mohamed [2018][26] conducted a descriptive study to assess nurses knowledge, practices and barriers affecting a safe administration of oxygen therapy.18% had adequate practices, 40% had average practices and 42% had inadequate practices.

**OBJECTIVE 3: To compare knowledge and practices regarding COPD prevention and management with selected demographic variables among staff nurses.**It was found that comparison of knowledge and practices regarding COPD prevention and management with selected demographic variables.Total of practices and total of knowledge were compared. Mean of practices was 61.23, standard deviation was 29.437 and mean of knowledge was 64.64, standard deviation was 9.853. t score of practices was 24.197 and knowledge was 65.605. Good practice skills were 93% and poor skills were 7%. The above findings were in compliance with the findings of MahranGhada, Radwan Marwan., et al., [2018][20] conducted a comparative study of critical nurses' knowledge and practice before and after education program about acute exacerbation of COPD in Egypt. The aim of this study is to evaluate nurses' knowledge and practice before and after education program about AECOPD. 60 nurses were divided into two groups (30 registered nurses and 30 internship nurses). Before the education program both groups had lower knowledge about AECOPD as clinical manifestations, diagnosis, nursing management and rehabilitation. But after the education program, internship nurses had higher knowledge about previous mentioned items (83.33%), (93.33%) and (80%) than registered nurses (26.66%), (66.66%) and (66.66%). Also patients assigned to the internship nurses group after the education program had lower dyspnoea level (0.87 + 0.97) than those assigned nurses' group (1.67 + 1.24) which means higher performance of internship nurses than registered nurses. CCN's and internship needs continuing education and training about the various critical cases as AECOPD to strengthen their role to plan and deliver more strategies to improve the quality of life of AECOPD patients.

**OBJECTIVE 4: To find out the association of knowledge regarding COPD prevention and management with selected demographic variables among staff nurses.** It was found that association of knowledge regarding COPD prevention and management with selected demographic variables. The selected demographic variables age, gender, professional qualification, attended any COPD patient were having significant relationship whereas marital status, previous rotation in respiratory wards, years of experience in respiratory wards were having non significant relationship.The above findings were in compliance with the findings of Catherine A O'Donnell, Hussein Jabareen, et al., [2010] conducted a cross sectional survey to identify workload, career intentions and the impact of professional isolation among practice nurses. Isolated nurses worked in practices with smaller list sizes ($p = 0.024$) and nursing teams ($p = 0.003$); were less likely to have someone they could discuss a clinical/professional ($p = 0.002$) or personal ($p < 0.001$) problem with; used their training and qualifications less ($p < 0.001$); had less productive appraisals ($p < 0.001$); and were less likely to intend staying in practice nursing ($p = 0.009$).

**SUMMARY:**

This chapter includes comparison and discussion of our study with respect to review of literature that we have collected in our study. So, researcher have compared his study with other studies which were closely related to each other.

## 6. SUMMARY, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

The chapter gives a brief account of the study including conclusion drawn from the findings, limitations of the study and implications, recommendations for future research.

**SUMMARY**

The study was conducted to assess the knowledge and practices regarding COPD prevention and management among staff nurses in selected hospital of district Patiala.

The knowledge and practices regarding COPD prevention and management among staff nurses was assessed by doing the survey of Rajindra Hospital, Patiala. Data was collected through self structured questionnaire and checklist tool. 100 samples were selected by the convenient sampling technique. 5% staff nurses were excellent, 86% were good, 9% were at average and 0% at below average. 93% had good skills and **7**% had poor skills.

## CONCLUSION

The study findings revealed that knowledge and practices of COPD prevention and management among staff nurses of district Patiala. 86% were having good knowledge and 93% were having good practices. It concluded that most of the nurses have good knowledge but with poor practices.

Among all socio demographic variables, the selected demographic variables age, gender, professional qualification, attended any COPD patient were having significant relationship whereas marital status, previous rotation in respiratory wards, years of experience in respiratory wards were having non significant relationship.

## IMPLICATIONS

The findings of the study have implications in the various fields of nursing. The dissemination of knowledge will take place when the research findings will be used in following fields:

A. Nursing practice
B. Nursing education
C. Nursing administration
D. Nursing research

## NURSING PRACTICE

This study has been based on practical skills of staff nurses regarding COPD prevention and management among staff nurses. Research is great example of improving practical skills among staff nurses and strengthening their knowledge.

Nurses are in strategic position to assess knowledge and practices of COPD among staff nurses. in people. Nursing staff and community health nurse can use the study in the following ways:

- Can check knowledge among staff nurses regarding COPD prevention and management.
- Can check practices among staff nursing regarding COPD prevention and management.
- Can check knowledge and practices among staff nurses regarding COPD prevention and management.

## NURSING EDUCATION

Education is a key component in improving the knowledge of an individual. The right method of education with an opportunity to practice and apply what has been taught is essential, “quality care through excellence in advance nursing education” is just about to meet the increasing demand of good quality of nursing.

Education is an integral part of the governance agenda, which includes education research and development and open ness. The nursing education programme is essential such as seminars, demonstrations, remonstrations to update the knowledge as well as skills of the nursing students so as to provide standard and quality nursing care this study has provided the important of improving the knowledge of nursing student regarding COPD.

One of the leading functions of nursing is imparting education, with newer knowledge; the scope of education also increases. Nursing educator should get the benefit of the study:-

- To include them in their class on teaching to enhance the knowledge of student.
- In community, there is the need to plan the education programs according to level of understanding of the beneficiaries.
- To plan the awareness camps as well as classroom teaching to incorporate in the content of health education.

## NURSING ADMINISTRATION

In the era of knowledge explosion and technological changes nursing has become a complex discipline with a rapidly with a rapidly growing body of knowledge. Continuing education is a lifelong process. It enable the learner to keep a changes in the field of speciality. Nursing administration are the key to plan, organize and conduct in service education, programme to nursing personnel.

Nurse as an administrator has a crucial role in planning the policies of imparting health information to the patients. Nursing administration must see that a separate budget should be allocated for in service education in the nursing department.

- The nursing administration faces a challenging role in these days. The nurse needs to know the recent developments, the new method and technologies getting in touch with the new findings will strengthen her/his self position and self confidence
- Nursing administration should anticipate need of the time and community health nurses should disseminate knowledge to the adults and family regarding the low back pain.
- Nurses who are in administrative role like District Public health nurse should implement and organize planned teaching program on low back pain in the hospital and community settings.

## NURSING RESEARCH

Research can help increase the body of the nursing knowledge which improves the care provided. Although actual performance is important, use of observation to explore nurse performance is limited is in clinical setting and potential of observation in research in this nature has yet to be fully exploited. A study reported that an improvement in knowledge after the end of the course. After the laps of six months when tested at a refresher course, the

improvement in knowledge remained. This reflects favourly on the importance of the course in changing knowledge towards COPD.

There are different situations and places where the problems are identified which need a systemic evaluation. The investigators need a lot of review materials and one may be obtained by using the study report:-

- Various methods may be used to strengthen the knowledge of people by the researcher, which should be published for the benefit of those who are not able to participate in the study.
- The results of the study provide the insight of the existing situation.
- The study format can be applied to assess the knowledge and practice of staff nurses regarding COPD in selected hospital, Patiala.

## RECOMMENDATIONS

Based on the study results the following recommendations were made:

- The study can be replicated on the large sample to validate and generalize the findings.
- The study can be conducted on different settings like national level.
- The study can be conducted on both genders in the community.
- The knowledge and practices of staff nurses was assessed
- A comparative study can be conducted to assess the knowledge and practices among staff nurses.

## LIMITATIONS

- Equal proportion of age group was not maintained.
- Non-probability sampling technique was used which limits generalization of findings.
- The present study was limited to assess the knowledge of staff nurses.
- It was administered to hospital area, Patiala.
- The size of sample was limited upto 100 itself.
- The study sample was conveniently conducted.

## SUMMARY

This chapter deals with the summary, conclusion, implications and recommendations of the study. This study was a new learning experience for the research. The result of the present study shows that there is a great need for the nurses to update their knowledge so as to save the life of the victim.