

Biopsychosocial Needs of Patients with Chronic Obstructive Pulmonary Disease

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Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a disease defined as an airway passage obstruction that is not fully reversible. Bronchial obstruction is progressive and is associated with the abnormal inflammatory response of lungs to noxious particles or gases. **Aim of the study:** to assess biopsychosocial needs of patients with COPD. Through: assessing demographic data, medical data, and knowledge regarding COPD of patients with COPD, also, assess physical, social and psychological needs of them. **Study Design:** A descriptive-exploratory research design were be utilized. **Setting:** The study was conducted in intermediate pulmonary intensive care unit at Ain Shams University Hospital. **Subjects:** Purposive samples of 50 adult patients with COPD were being included in the study. **Data Collection Tools:** Patients' structured interview questionnaire & Biopsychosocial needs assessment tool for patients with COPD **Results:** This study revealed that 70% of studied patients had unsatisfactory level of total knowledge regarding COPD, regarding physical needs, 48% of studied patients partially dependent. Also, 32% of them completely dependent in daily living activity, regarding psychological needs, 40% of studied patients had moderate anxiety level. 46% of studied patients had moderate depression level Regarding social needs, 40% of studied patients had moderate social dysfunction and 38% of them had severe social dysfunction. **Conclusion:** About half of them had partially independent level of ADL regarding total physical needs. Also, half of them had moderate depression level related to total psychological needs. In addition to more than one third of them had severed social dysfunction. **Recommendations** include rehabilitation program must held for patients with COPD to meet biopsychosocial needs and designing illustrated guidelines regarding home care management for patients with COPD

Keywords: Chronic obstructive pulmonary disease; Biopsychosocial needs

Introduction:

Chronic Obstructive Pulmonary Disease (COPD) is currently the fourth leading cause of death in the world. COPD is a major cause of chronic morbidity and mortality throughout the world; many people suffer from this disease for years and die prematurely from it or its complications. Globally, the COPD burden is projected to increase in coming decades because of continued exposure to COPD risk factors and aging of the population (Vogelmeier, et al., 2017).

Chronic Obstructive Pulmonary Disease (COPD) is a common, preventable and treatable disease that is characterized by persistent

respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases and influenced by host factors including abnormal lung development. (Smid, et al., 2017).

Important risk factors that contribute to COPD development are: Cigarette smoking, air pollution, occupational exposure (coal, cotton, grain), Exposure to heavy amounts of secondhand smoke, Frequent use of a cooking fire without proper ventilation, infections and genetic factors . Clinical Manifestations of COPD are chronic cough, Shortness of breath while doing everyday activities (dyspnea) ;

often worsen over time, Frequent respiratory infections, Blueness of the lips or fingernail beds (cyanosis), Fatigue and Producing a lot of mucus (also called phlegm or sputum) (Lange, Celli and Agusti 2015).

COPD is nowadays recognized as a multicomponent disease, despite being defined by the presence of persistent airflow limitation. The disease also affects systems and organs outside the lungs, called systemic effects of COPD (e.g., weight loss, muscle dysfunction, cardiovascular disease). For instance, patients with COPD have a lower physical activity level, even early in the disease process, a substantially impaired lower limb muscle and handgrip strength, and a lower exercise capacity in comparison with non-COPD subjects. Franssen, et al, 2018).

Patients with COPD also have a worse mental status compared to non-COPD subjects (e.g., more symptoms of anxiety and depression), a lower quality of life, more cognitive dysfunction and more symptoms of fatigue. While it was shown that the diagnosis of COPD has social consequences. The combination of the pulmonary abnormalities and these systemic effects of COPD determines the integrated health status (Antoniou, et al. 2016)..

Assessing biopsychosocial needs for COPD patients is very important because patients suffering from COPD face a condition of existence is defined as performance impairment in everyday activities and reliance on long-term oxygen therapy, with limited functional ability and a significant psychosocial burden. Research suggests that patients with COPD have a high incidence of anxiety and depression, which has a significant negative impact on their quality of life so, Assessing physical, psychological and social needs for COPD patients is very useful for facilitating their recovery, helping them cope with any problems experienced (Annerika, et al.2016).

Significance of the study:

Chronic obstructive pulmonary disease is a global health problem affects 210 million

people all over the world. It has major morbidity and mortality rate whereas; three million patients with COPD worldwide die annually (Varmaghani, et al., 2019). Statistical analysis of COPD prevalence in Egypt showed that 3 millions of the Egyptian population had COPD. In different studies prevalence were from 3.3% up to 10%. Among men while it was from ~1.5% to~6.7% in women (Said, et al., 2015).

Aim of the study:

The aim of this study was to assess biopsychosocial needs of patients with COPD. Through the following:

- 1- Assessing demographic characteristic of patients with COPD.
- 2- Assessing medical data of patients with COPD.
- 3- Assessing patients' knowledge regarding COPD.
- 4- Assessing physical, social and psychological needs of patients with COPD.

Research questions:

-What are the biopsychosocial needs of patients with COPD?

Subjects and Methods:

I. Technical Design:

It included research design, study settings, subjects and tools of data collection.

Research Design:

A descriptive - exploratory design was used to conduct this study.

Study Settings:

The study was carried out at intermediate pulmonary intensive care unit at Ain Shams University hospital, affiliated to Ain Shames University. This unit in 1st floor medicine department ain shams university hospital which consisted of five beds

Subjects:

A Purposive sample of 50 adult patients with COPD were included to conduct this study, based on the following criteria (Adult patient from both gender, able to comprehend instructions and agree to participate in this study, Patient was free from other chest co morbidity (lung cancer, interstitial pulmonary

fibroses, etc), pulmonary dysfunction due to neuromuscular disease as (myasthenia gravis or guillain Barre), Patients hadn't disturbance in consciousness, and Patients hadn't mentally or psychiatric illness.

Sample size:

The sample size was calculated by adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% and known total patients with COPD 167 in the year (2017) by using the following equation:

$$n = \frac{N \times p(1-p)}{\left[\frac{N-1}{d^2} + z^2 \right] + p(1-p)}$$

$$50 = \frac{167 \times 0.048(1-0.048)}{\left[\frac{167-1}{(0.05)^2} + 1.96^2 \right] + 0.048(1-0.048)}$$

N= Community size

z= Class standard corresponding to the level of significance equal to 0.95 and 1.96

d= The error rate is equal to 0.05

p= Ratio provides a neutral property = 0.048

Total sample size = 50 patients

(Chow, & Liu, 2008).

Tools of data collection:

Two tools were used to collect necessary data and fulfill the study aim.

I- Tool (1) structured interview questionnaire:

This tool was developed and modified by the investigator; it was written with Arabic language; it includes the following three parts:

Part I: patients' demographic data: it concerned with assessing demographic data of patients with COPD contain (age, gender, level of education, marital status, occupation, the nature of the work, Place of residence, nature of living, monthly income). It consisted of nine MCQ questions

Part II: Patient medical data:

It was used to collect data about general medical data, patient medical history which include present, past and family health history. it consisted of seventeen questions as

following; General medical data include the following four items (body mass index, practice of exercise, smoking, and duration of smoking). Present health history include two MCQ questions (duration of the disease and chief complain). past health history include the following seven items (presence of chronic diseases ,its type, presence allergies, kind of allergies, surgery, enter intensive care because of COPD, and how many times). Family health history includes the following four items (presence of pulmonary diseases, its type, presence of chronic diseases, and its type)

Part III: patients' knowledge regarding COPD

This part was designed by investigator after reviewing recent and relevant literature (Williams, & Hopper, 2015) and (Mohamed, et al 2017) to assess patients' level of knowledge regarding COPD. It involves forty five true and false questions. It was related to knowledge regarding definition of COPD (two questions), causes (three questions), sign and symptoms (seven questions), complications (three questions), treatment of chronic obstructive pulmonary disease (thirteen questions) and medical and educational guidance (seventeen questions).

❖ Scoring system

Regarding scoring system of the patients' knowledge regarding COPD; it included 45 items. The responses for each statement were either (true or false). The correct answer scored (1 grade). The incorrect answer scored (zero). The total grade was (45grades). The total score of the knowledge assessment for every patient was summed-up, and then converted to percentage score. The total level of patients' knowledge score categorized as following:

- More than or equal 75% or (≥ 34 grade) was considered satisfactory level of knowledge
- Less than 75% (< 34 grade) was considered unsatisfactory level of knowledge

Tool (2) Biopsychosocial needs of patients with COPD assessment tool: it was written and modified by the investigator to assess physical, psychological and social needs

of patients with COPD after reviewing recent literature; it included three parts as following:

Part (1): physical needs assessment:

It assessed by using modified london chest activity of daily living scale adapted from (Garrod, et al 2000). This part consisted of ten items; to assess routine ADL, which was designed to reflect activities limited by breathlessness as a result of lung impairment, which contain the following items (showering, toileting, dressing, dressing up, nutrition, The movement outside the bed, Going up the stairs, Going down the stairs, Stand up from a sitting position, and Sitting from a lying position)

❖ Scoring system

The total score for ADLs ranges from 10 to 30. The patient's response was given based on three likert scale (1 = completely dependent (totally unable), 2= partially dependent(able with assistance), 3 = Independent(able without assistance). It was categorized as follow:

- Totally unable (10-16 grade), which indicate completely dependent level of ADLs.
- -Able with assistance (17-23 grade), which indicate partially dependent level of ADLs.
- -Able without assistance (24- 30grade), which indicate independent level of ADLs.

Part (2): Psychological needs assessment:

it was used to assess psychological problem for patient with COPD by using hospital anxiety and depression scale (HADS) adapted from (Terkawi, 2017). The HADS include 14 items it comprises two subtitles: anxiety (7 items) include (feeling tense, frightened, Worrying thoughts, feel relaxed, frightened feeling, feel restless, sudden feelings of panic) and depression (7 items) include (still enjoy the things, can laugh, feeling cheerful, slowed down, lost interest in appearance, look forward with enjoyment to things, can enjoy a good book or radio or TV program).

❖ Scoring system

Each item-scores range from 0 to 3 where (0 = no signs of depression/anxiety, 1= mild signs of depression/anxiety, 2 = moderate signs of depression/anxiety, 3 = Severe signs of

depression/ anxiety).So the possible scores separately ranged from 0 to 21 for anxiety and 0 to 21 for depression. It was categorized as follow:

- (0-7) indicate non-cases of anxiety and/or depression
- (8–10) indicate Mild level of anxiety and/or depression.
- (11–14) indicate Moderate level of anxiety and/or depression.
- (15–21) indicate severe level of anxiety and/or depression.

-Part (3): Social needs assessment: it concerned to measure the dysfunction aspect of adjustment. Effective coping problem solving and adaptive behavior are integral part to healthy social functioning by using Social Dysfunction Rating Scale adapted from (wraa, et al 2013). It included three subtitles included 21 statements (four concerned with Self system, six concerned with Interpersonal system and eleven concerned with Performance system).

❖ Scoring system

The social dysfunction rating scale consisted of (21) statements. Each statement was ranged from 0-2, it was classified as following (0= always, 1=sometimes, 2= never).

The total score equal 42grade were divided as following;

- 0 - 17: Sever level of social dysfunction.
- 18 - 25: Moderate level of social dysfunction.
- 26 -33: Mild level of social dysfunction
- 33- 42: indicate no social dysfunction

II. Operational Design:

The operational design consisted of preparatory phase, validity and reliability, pilot study and fieldwork.

Preparatory Phase:

It included reviewing of related literature, and theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines to develop tools for data collection.

Testing Validity and Reliability:

Content validity was done to identify the

degree to which the used tools measure what was supposed to be measured. Tools were examined by a panel of five medical surgical nursing experts. The Jury reviewed the tools for clarity, relevance, comprehensiveness and simplicity then based on the opinion of the jury a minor modification was done and final form was developed.

Alpha Chrombach test was used to measure the consistency of the tools used under study that include patients' knowledge regarding COPD questionnaire, physical, social and psychological needs questionnaire of patients with COPD was (0.95).

Pilot study:

A pilot study was carried out on ten patients in intermediate pulmonary intensive care unit at Ain Shames University hospital to test feasibility, objectivity, applicability of the data collection tools and time to fill the study tools. Carrying out the pilot study gave the investigator experience to deal with the included subjects, and the data collection tools. Data obtained from the pilot study was analyzed and no modifications were done. Study subjects included in the pilot were included in the main study sample as no changes were needed in the questionnaires.

Fieldwork:

The current study was conducted on two phases: the preparation and implementation phase.

As regards the preparation phase, it was concerned with construction and preparation of different data collection tools. This in addition to managerial arrangement to carry out the study, where the investigator prepared formal requests to the directors of Ain Shames University hospital. The purpose and nature of the study were explained to gain their acceptance, and support. This stage required about one month duration and ended by carrying out the pilot study.

Regarding the implementation phase, it was carried out after the preparation phase. Data of the current study were collected over a period of 4 months starting from November 2019 to August 2020. The data were collected

from patients with COPD in selected setting. The involved 50 patients were informed individually about the purpose and nature of the study,

The researcher visited the selected setting two days / week at morning and afternoon shifts. Each patient was contacted and interviewed for 20- 40 minutes to fill out structured interview questionnaire. The researcher assessed patients' demographic characteristics, medical data of patients, patients' knowledge regarding COPD, and physical, social and psychological needs of patients with COPD the questionnaires was filled out by the researches.

III. Administrative Design:

Before starting on the study, an official letter was submitted from the Dean of the Faculty of Nursing, at Ain Shams University to the directors of Ain Shams University Hospital to take their approval to conduct the study and collect data, and written permission obtained from director of intermediate pulmonary intensive care unit at Ain Shames University hospital

Ethical considerations:

The ethical research considerations in testudy include the following:

The research approval obtained from the ethical committee in faculty of nursing, Ain Shams University before starting the study. Also, oral consents for patients' agreements to be included in the study were obtained after explanation of the nature and purpose of the study.

Each patient was free to either participate or not in the current study and had the right to withdraw from the study at any time without any rational.

In addition patients were informed that obtained data was collected for research purpose. Confidentiality and anonymity of each subject were assured through coding of all data.

IV. Statistical Analysis:

Data were analyzed using Statistical Program for Social Science (SPSS) version 20.0. Quantitative data were expressed as mean \pm standard deviation (SD). Qualitative data were

expressed as frequency and percentage.

The following tests were done:

- Chi-square (X^2) test of significance was used in order to compare proportions between two qualitative parameters.
- Spearman's rank correlation coefficient (rs) was used to assess the degree of association between two sets of variables if one or both of them was skewed.

Results:

Table (1): demonstrates that the mean age of studied patients 45.2 ± 9.41 years, 54% of them were male and 76% were married. Moreover, this table shows that 38% of studied patients had Medium education, 58% of them had work and 56% from patients live in urban area. Regarding nature of the work 66% of them exposure to dust or chemical, 88% live with family and 72% of them had not enough monthly income.

Figure (1): illustrated that, 70% of studied patients had unsatisfactory level of total knowledge, While 30% of them had satisfactory level of total knowledge regarding COPD

Figure (2): reports that 48% of studied patients had partially dependent level during daily living activities, also 32% & 20% of them completely dependent and independent level, respectively related to total physical needs.

Figure (3): shows that, 40% of studied patients had moderate anxiety level and 38% of them had severed anxiety level. Only 14% and 8% of them had mild anxiety

level and non-anxiety, respectively. 46% of studied patients had **moderate** depression level and 22% of them had severe depression level. Only 20% and 12% of them had mild depression level and none.

Figure (4): demonstrated that,40% of studied patients had moderate social dysfunction and 38% of them had severe social dysfunction. 14% of them had mild social dysfunction and 8% of them had nonsocial dysfunction,

Table (2): shows that, there were significant relation between almost of sociodemographic characteristics (educational level, place of residence, Occupation, Live with whom and monthly income)of studied patients and total level of their knowledge. While there were no significant relation with age, gender, marital status and nature of the work.

Table (3): demonstrated that, there was highly significant relation between total physical needs of studied patients and age, physical. While, there were significant relation with gender, job,. But there were no significant relation with place of residence, live with whom and monthly income

Table (4): showed that, there was high negative correlation between anxiety, depression and physical needs at p value <0.05 . While, there was highly positive correlation between social dysfunction and physical needs at p value <0.01 But, there was no correlation between knowledge level and anxiety, social dysfunction at p value >0.05 .

Table (1): Distribution of the studied patients according to their demographic characteristics (n=50).

| Items | N | % |
|---|-------------------|----|
| Age (year) | | |
| 20 - <40 | 12 | 24 |
| 40 - <60 | 20 | 40 |
| ≥60 | 18 | 36 |
| Mean SD | 45.2± 9.41 | |
| Gender | | |
| Male | 27 | 54 |
| Female | 23 | 46 |
| Marital status | | |
| Married | 38 | 76 |
| Not married | 12 | 24 |
| Educational level | | |
| Not read and write | 10 | 20 |
| Reads and writes | 15 | 30 |
| Medium education | 19 | 38 |
| University | 6 | 12 |
| Occupation | | |
| Works | 29 | 58 |
| Does not work | 21 | 42 |
| The nature of the work in it is exposed to soil, odors, fumes or chemicals | | |
| No | 17 | 34 |
| Yes | 33 | 66 |
| Place of residence | | |
| Urban | 28 | 56 |
| Rural | 22 | 44 |
| Live with whom | | |
| Alone | 6 | 12 |
| With family | 44 | 88 |
| Monthly income | | |
| enough for the expenses of treatment | 14 | 28 |
| not enough for the expenses of treatment | 36 | 72 |

**Figure (1):** total satisfactory level of studied patient knowledge regarding COPD (n=50).

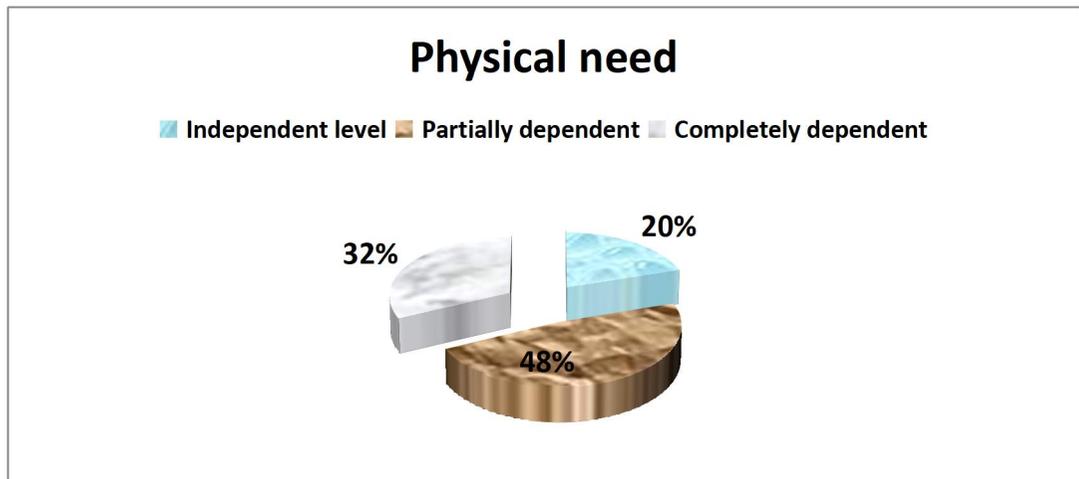


Figure (2): Distribution of studied patient related total physical need (n=50).

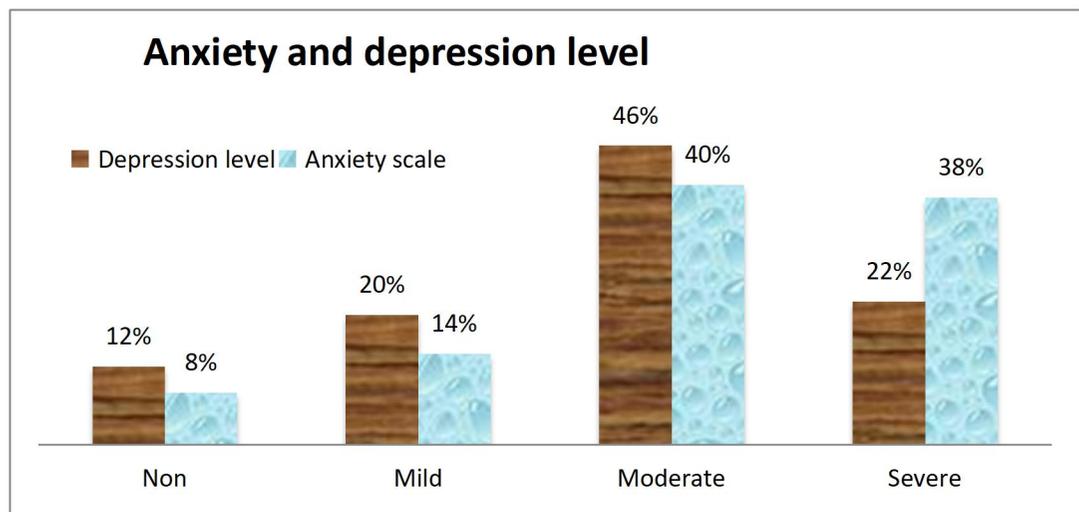


Figure (3): Distribution of studied patient regarding psychological needs (n=50).

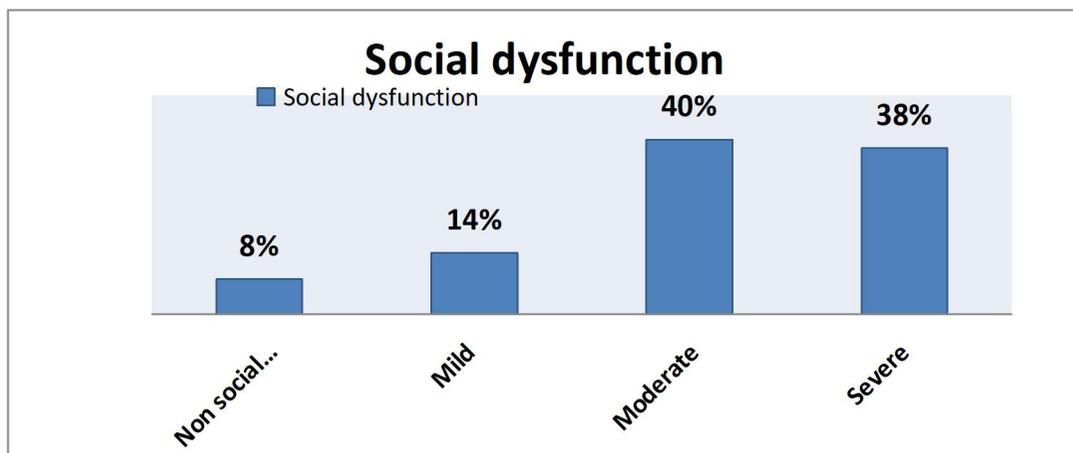


Figure (4): Distribution of studied patient related total social dysfunction (n=50).

Table (2): Relation between sociodemographic characteristics of the studied patients and their total level of knowledge (n=50).

| Items | Total Knowledge | | | | X2 | P-Value | |
|-----------------------------|------------------------|----|--------------------|----|------|---------|---------------|
| | Satisfied (n= 15) | | Unsatisfied (n=35) | | | | |
| | N | % | N | % | | | |
| Age (year) | ≥60 | 4 | 26.7 | 14 | 40 | 2.101 | .054 |
| | 40 - <60 | 6 | 40 | 14 | 40 | | |
| | 20 - <40 | 5 | 33.3 | 7 | 20 | | |
| Gender | Male | 8 | 53.3 | 19 | 54.3 | 1.945 | .061 |
| | Female | 7 | 46.7 | 16 | 45.7 | | |
| Educational level | does not read or write | 0 | 0 | 8 | 22.8 | 7.187 | .005** |
| | reads and writes | 2 | 13.3 | 13 | 37.1 | | |
| | Medium education | 7 | 46.7 | 12 | 34.4 | | |
| Place of residence | University | 6 | 40 | 2 | 5.7 | 3.949 | .032* |
| | Urban | 9 | 60 | 19 | 54.3 | | |
| Occupation | Rural | 6 | 40 | 16 | 45.7 | 4.001 | .021* |
| | Employee | 10 | 66.7 | 19 | 54.3 | | |
| Marital status | Unemployed | 5 | 33.3 | 16 | 45.7 | 1.071 | .068 |
| | Married | 11 | 73.3 | 27 | 77.2 | | |
| Live with whom | Not married | 4 | 26.7 | 8 | 22.8 | 5.999 | .009** |
| | Alone | 1 | 6.7 | 5 | 14.3 | | |
| Monthly income | With family | 14 | 93.3 | 30 | 85.7 | 5.623 | .010* |
| | Sufficient | 9 | 60 | 5 | 14.3 | | |
| nature of the work exposure | Insufficient | 6 | 40 | 30 | 85.7 | 1.945 | .061 |
| | yes | 8 | 53.3 | 19 | 54.3 | | |
| | No | 7 | 46.7 | 16 | 45.7 | | |

*significant at $p < 0.05$.**highly significant at $p < 0.01$.

Table (3):Relation between demographic characteristics of the studied patients and their total physical need (n=50).

| Items | | Total physical needs | | | | X2 | P-Value | | |
|--------------------|--------------|----------------------------|------|----------------------------|------|----|---------|---------------------|--------|
| | | completely dependent(n=16) | | Partially dependent (n=24) | | | | Independent (n= 10) | |
| | | N | % | N | % | N | % | | |
| Age (year) | ≥60 | 3 | 18.7 | 9 | 37.5 | 6 | 60 | 6.984 | .008** |
| | 40 - <60 | 5 | 31.3 | 12 | 50 | 3 | 30 | | |
| | 20 - <40 | 8 | 50 | 3 | 12.5 | 1 | 10 | | |
| Gender | Male | 12 | 75 | 12 | 50 | 3 | 30 | 4.512 | .011* |
| | Female | 4 | 25 | 12 | 50 | 7 | 70 | | |
| Place of residence | Urban | 9 | 56.3 | 14 | 58.3 | 5 | 50 | 1.046 | .058 |
| | Rural | 7 | 43.7 | 10 | 41.7 | 5 | 50 | | |
| Job | Employee | 8 | 50 | 14 | 58.3 | 7 | 70 | 2.962 | .044* |
| | Unemployed | 8 | 50 | 10 | 41.7 | 3 | 30 | | |
| Live with whom | Alone | 2 | 12.5 | 2 | 8.3 | 2 | 20 | 0.968 | .067 |
| | With family | 14 | 87.5 | 22 | 91.7 | 8 | 80 | | |
| Monthly income | Sufficient | 4 | 02 | 6 | 25 | 4 | 40 | 1.008 | .062 |
| | Insufficient | 12 | 75 | 18 | 75 | 6 | 60 | | |

*significant at $p < 0.05$.**highly significant at $p < 0.01$.

Table (4): Correlation between of them had total biopsychosocial needs and total level of knowledge of studied patients

| | Physical need | Anxiety | Depression | Social dysfunction | Knowledge level |
|-----------------|---------------|---------------------|---------------------|---------------------|---------------------|
| Physical need | | r -0.226 p .018* | r -0.376 p .011* | r 0.517 p .003** | r 0.104 p .056 |
| Anxiety | | | r 0.477 p .006** | r -0.299 p .031* | r -0.287 p 0.39* |
| Depression | | | | r -0.300 p .029* | r -0.321 p .021* |
| Social need | | | | | r 0.115 p .051 |
| Knowledge level | | | | | |

(*) Statistically significant at $p < 0.05$ --(**) highly significant at $p < 0.01$

Discussion:

Concerning the demographic characteristics of patients with COPD; the results of the present study showed that more than one third of the studied subjects their age group ranging from more than 40 and less than 60 years old. This might be due constant exposure for environment pollution for years additionally as people age there is gradual loss of the elastic recoil of the lung. The lungs become more rounded and smaller. This finding was in agreement with **Tabar, & Alshraideh, (2019)** who carried out study entitled "Correlates and predictors of health-related quality of life among patients with COPD" and mentioned that, most of studied patients their age more than 60 years.

Regarding to **gender**, in the present study; more than half of the studied patients were males. this finding was compatible with **Shah Shah, & Kachoria, (2019)** in their study about "Health-related quality of life and associated factors in patients with chronic obstructive pulmonary disease" Who stated that, the majority of the studied patients were males While contradicted with **Stellefson, et al, (2019)**, who carried out study entitled "Association Between Health Literacy, Electronic Health Literacy, Disease-Specific Knowledge, and Health-Related Quality of Life Among Adults With Chronic Obstructive Pulmonary Disease" and reported that, females are more likely to have chronic obstructive pulmonary disease than males.

Concerning **marital status**, about three quarter of the studied patients were married this finding was agreed with **Stellefson, et al (2019)**, who carried out study entitled "Association Between Health Literacy, Electronic Health Literacy, Disease-Specific Knowledge, and Health-Related Quality of Life Among Adults With Chronic Obstructive Pulmonary Disease" Who found that the most participants were married. In researcher view this may reveal the load, as well as the higher levels of anxiety and depression experienced by the patients through their role in caring for their families.

In relation to **educational level**, the

current study illustrated that, half of the studied patients were not read and write or just able to read and write. This may be due to conduction of the study in governmental hospital where there are high percentages of low social economic class patients who aren't educated, this finding in the same line with **Sharma, & Joshi, (2015)** in their study about "Quality of life of patients with chronic obstructive pulmonary disease", Who found that 70% of the studied patients were not read and write.

Concerning **Place of residence**, the current study revealed that, more than half of the studied subjects are living in urban areas. This is in accordance with **Lee et al., (2017)** "Different impacts of respiratory symptoms and comorbidities on COPD-specific health-related quality of life by COPD severity" who found that majority 81.7% of the studied subjects were living in urban areas. While contradicted with **Sharma, & Joshi, (2015)**, in their study about "Quality of life of patients with chronic obstructive pulmonary disease". who found that more than half of the studied subjects are living in rural areas.

In relation to **monthly income**, the present study showed that, the majority of studied patients had inadequate for medication cost. This finding agreed with study done by **Eisner, (2011)**, entitle "Socioeconomic status, race and COPD health outcomes". who found that, more than one third of studied patients had inadequate income for medication cost. This could be due to their low socioeconomic class, the possible recurrent sick caused by the disease and the high costs of treatment.

Relating to **total satisfactory level of patients' knowledge** regarding chronic obstructive pulmonary disease, the results of the present study showed that, the more than two third of studied patients had total unsatisfactory level of knowledge regarding chronic obstructive pulmonary disease. This might be due to that the patients had low education level and be deficient in of health awareness in the community. This finding was in agreement with **Wong & Yu, (2016)** in their study entitle "Correlates of disease-specific knowledge in Chinese patients with COPD" who presented

that, the majority of studied patients hadn't enough knowledge about chronic obstructive pulmonary disease.

In relation to **total physical needs** assessment, the present study showed that, about half of studied patients had total partially dependent and about one third of them had total completely dependent during activity of daily living this finding was in agreement with the study carried out by **Ozsoy, et al (2019)** about "Factors influencing activities of daily living in subjects with COPD" who revealed that, two third of studied patients in active and had low physical activity level and low level of performance and low satisfaction of performed activity of daily living

Regarding **total psychological needs**, the results of the present study showed that, two fifth of studied patients had moderate anxiety level, also about one third of studied patients had sever anxiety level. This finding is in agreement with **Thapa, et al, (2017)**. Who carried study entitled "Anxiety and depression among patients with chronic obstructive pulmonary disease and general population in rural Nepal "and mentioned that majority of studied patients had moderate to severe level of anxiety.

Also the results of the present study showed that, about half of studied patients suffered from moderate depression level and around one quadrant of them had had severe depression level This finding is in agreement with **Chan, et al., (2017)**. Who carried study entitled "Meeting the psychological needs of copd patients and enhancing self-efficacy: integrating clinical psychology in a community respiratory service" and mentioned that majority of COPD patients had depression more than two fifth of them had moderate depression level and more than one third of them had severe depression.

Regarding **total social needs**, the results of the present study showed that, two fifth of studied patients had moderate social dysfunction and more than one third of them had severe social dysfunction this finding is in agreement with **Miravitlles, & Ribera, (2017)**.

their study entitle "Understanding the impact of symptoms on the burden of COPD" and observed that the majority of the fifty COPD patients were housebound, and nearly a third were chair bound. The effects of virtual confinement and social isolation over a protracted period become more evident as patients have less contact with the outside world and socialization becomes reduced.

Regarding the relation between the studied patients' level of knowledge, the current study revealed that, there were statistically significant relation between patients' knowledge and educational level, place of residence, Occupation, This findings came in agreement with study done by **Nakken, et al, (2016)** about "Knowledge gaps in patients with COPD and their proxies", and mentioned that there are statistically significant relation between patients' knowledge, level of education and occupation..

The current study illustrated that, there were significant relation between total physical needs of studied patients and their age, physical activities , disturbance in consciousness, gender, occupation, smoking, period of COPD, shortness of breathing, swelling of ankle and chronic diseases This findings were agreed with **Ozsoy, et al.,(2019)** in their study entitle "Factors influencing activities of daily living in subjects with COPD" ,and found that there were statistically significant relation between patients' physical activities, gender, level education , occupation period of COPD, shortness of breathing, swelling of ankle and chronic diseases.

The current study illustrated that, there was high positive correlation between social dysfunction and physical needs as well as , there was high negative correlation between anxiety, depression and physical needs these findings were in accordance with **Tabar, & Alshraideh, (2019)** In their study entitled "Correlates and Predictors of Health-Related Quality of Life among Patients with COPD" The study results showed the COPD-related fatigue causes a severe, negative impact on the physical, emotional, cognitive and social functioning of all participants, the negative impacts on daily

functioning leading to a heavy mental burden, decreasing patients' joy in life.

Conclusion:

More than two third of studied patients had total unsatisfactory level of knowledge regarding chronic obstructive pulmonary disease. Related to biopsychosocial needs of patients with COPD (physical, psychological, social), about half of them had partially independent level of ADLS regarding total physical needs. Also, half of them had moderate depression related total psychological needs. In addition to, more than one third of them had severe social dysfunction.

Recommendations:

This study recommended that:

1. Rehabilitation program must held for patients with COPD to meet biopsychosocial needs
2. Coping strategies must be delivered for patients with COPD about life style changes.
3. Designing illustrated guidelines regarding home care management for patients with COPD
4. Replication of the study on large sample to be able to generalize the study results.

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