IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e- ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 7, Issue 4 Ver. VII (Jul.-Aug. 2018), PP 76-89
www.iosrjournals.org

Physical and Psychosocial Adaptation Strategies of Patients with Chronic Obstructive Pulmonary Disease

Mona Ali Hassan Eladham[1], Naglaafathallaelsayed[2], Shadia Ahmed Aboudonia[3]
[1]*Medical Surgical Nursing, Faculty of Nursing, Alexandria University*
[2]*Medical Surgical Nursing, Faculty of Nursing, Alexandria University*
[3]*Medical Surgical Nursing, Faculty of Nursing, Alexandria University*
Corresponding Author: Mona Ali Hassan Eladham

Abstract: *Chronic Obstructive Pulmonary Disease (COPD) is a chronic debilitating condition that typically increases in severity with aging, with increasingly onerous physical and psychosocial consequences.*
Objective: *The aim of this study was to determine the physical and psychosocial adaptation strategies used by COPD patients.* ***Setting:*** *The study was conducted at Inpatient Chest Diseases Units of the Alexandria Main University Hospital.* ***Subjects:*** *Subjects of the study consisted of convenient sample of 100 adult patients with COPD.* ***Tools:*** *Five tools were used to collect the necessary data.* ***Results:*** *Regarding scores of physical disturbance the finding revealed that respiratory disturbance scores was the highest mean of all physical disturbances parameters. More than half of the patients had high social activities score above 75% while less percentage (27%) had moderate score between 50% to less than 75%. Physical disturbance score was negatively correlated with the total physical adaptation strategies score.* ***Conclusion:*** *COPD has a negative impact not only on the physical activities but also on the psychological, social and financial aspects of life.* ***Recommendations:*** *Development structured health education and rehabilitation programs for COPD patients using different educational media.*

Keywords: *Chronic obstructive pulmonary disease, Physical adaptation, psychosocial adaptation, pulmonary rehabilitation.*

Date of Submission: 06-08-2018 Date of acceptance: 20-08-2018

I. Introduction

Chronic Obstructive Pulmonary Disease (COPD)defined as "a disease state characterized by airflow limitation that is not fully reversible. Airflow obstruction usually accompanied with symptoms such as chronic cough, exertion dyspnea, fatigue, expectoration and wheeze. Such symptoms affect patients physically, emotionally and socially and lead to an increase in the social support needs of the patients (Aras et al and Tel 2009). [1, 2]

In the United States COPD is the third leading cause of death (2011). [3]It's a common chronic condition associated with a rapidly increasing physical, social and economic burden in terms of both direct health care costs including hospitalizations and medication and indirect costs (productivity loss, work absenteeism, premature retirement)[4]. It is estimated that approximately 210 million people worldwide have COPDand its incidence is believed to be rising.[5, 6]

Patientswith COPD have a limited quality of life (QOL) preventing or limiting every day activities such as working, activities requiring physical exertion, household chores and participation in family activities [7].Dyspnea has been rated as one of the most significant contributors to diminished Health Related Quality of Life in patients with COPD (Nishimura et al., 2008)[8].

Living with chronic illness requires the ability to adapt to living with the stressors of unremitting symptoms such as pain, fatigue, depression and anxiety. While recovery is the desired outcome of illness, for those with chronic illnesses, the more attainable two outcomes may be that of maintained psychological and physiological well-being in the face of these chronic demands on fitness. [9]

Adaptation is a constant, ongoing process that requires a change in structure, function or behavior so that the person is better suited to the environment; it involves an interaction between the person and the environment. The desired goals of adaptation for any system are survival, growth and reproduction. [10]

Since COPD has no cure, adaptation and lifestyle changes should accompany medical treatment. They help patients feel better, stay more active and slow the progress of the disease, relieve symptoms, improve exercise tolerance, improve health status, prevent and treat exacerbations, prevent complications and reduce mortality. [11]

Consequently it is important to know how well COPD patients get along physically, socially and psychologically, how they respond and adapt to their respiratory disturbances imposed by their disease and the

factors that either contribute to or inhibit their adaptation. These knowledge can help health care providers to understand the patients better, individualize health education and rehabilitation measures and possibly to slow the progress of the disease. [(12)]

Nurses can have a major impact on patients' symptoms and QOL through appropriate patient assessment, communication with the clinical team, and implementation of proper management. The role of nurse-led consultations with patients has become more important in the management of COPD, and nurse-led education and intervention programs have been reported to improve patient knowledge, increase the rate of smoking cessation, and reduce the frequency of exacerbations. [(13)]

Aim of the study: This study aimed to determine the physical and psychosocial adaptation strategies used by patients with COPD.

Research questions:

- What are the types and levels of physical and psychosocial disturbances among patients with COPD?
- What are the physical and psychosocial adaptation strategies used by patients with COPD towards their identified disturbances?

II. Materials and Methods

Materials

Design:It is a descriptive research design.

Setting:The study was conducted at Inpatient Chest Diseases Units of the Alexandria Main University Hospital.

Subjects: A convenience sample of 100 adult patients of both sexes diagnosed with COPD

Tools: Five tools were developed by the researcher to collect the necessary data.

Tool I: Patient's biosociodemographic data which included patient age, sex, level of education, marital status, occupation, medical and family history.

Tool II: Chronic Obstructive Pulmonary Disease Patients' Physical Assessment StructuredInterview Schedule usedto assess types and severity of physical symptoms and disturbances among COPD patients.

Tool III: Chronic Obstructive Pulmonary Disease Patients' Psychosocial Assessment Structured Interview Schedule was constructedto assess the effect of the disease on psychosocial health status. It consisted of two parts:

A. Chronic Obstructive Pulmonary Disease Patients' Psychological Assessment.
B. Chronic Obstructive Pulmonary Disease Patients' Social Assessment.

Tool IV:Physical Adaptation Strategies Structured Interview Schedule of Patients with COPD: It included questions to identify detailed descriptions of the physical adaptation strategies performed by patients in their daily living activities.

Tool V: Psychosocial Adaptation Strategies Structured Interview Schedule of Patients with COPD: This tool comprised questions to identify detailed descriptions of thepsychosocial adaptation strategies performed by patients in their daily living activities of the following areas:

A. Psychological adaptation strategies.
B. Social adaptation strategies that include.

***Methods*:** This study was conducted according to the following steps:

- Official letterswere directed to the director of the chest diseases department of Alexandria Main University Hospital.
- The assessment tool of "physical and psychosocial disturbances"and "physical and psychosocial adaptation strategies" among the studied patients was constructed by the researcher in English language after review of relevant literature. **[(14- 21, 22, 27)]**
- All tools were then translated into Arabic language.

- Tools of the study were submitted to a Jury of 5 experts in the field of Medical Surgical Nursing to test tool content and construct validity, some modifications were introduced accordingly.

- Reliability of the tools was tested by using Alpha Cronbach's test.
-A pilot study was carried out before starting the data collection. It was applied on 10 patients to test visibility, clarity and applicability of the tools.
-Data collection of this study was carried out over a period of four months from January to May (2015) by the researcher.

Statistical analysis of the data:

1. Data were fed to the computer and analyzed using IBM SPSS software package version 18.
2. Frequency tables and cross tabulations were used to illustrate the results of categorical data and tested by the Chi Square Test. Quantitative data were summarized by the arithmetic mean and standard deviation.
3. Kolmogorov-Smirnov test was used to examine the normality of data distribution.
4. Descriptive statistics including frequency, distribution, mean and standard deviation were used to describe different characteristics.
5. Univariate analysis including: Chi-Square test and Monte Cario correction test were used to test the significance of results of qualitative variables.
6. Linear correlation was conducted using spearman Rho coefficient to show correlation between different studied parameters among the studied patients.
7. The significance of the results was considered at the 5% level of significance.

III. Results

Table (1): Shows thatpatient who aged between 50 and 60 years represented the majority of the studied patients (79%), male, illiterate.Most patients (77%) were compliant with their treatment while those who were not compliant (23%) stated that the cause for non- compliance was mainly expensive cost of medications (20%).Moreover, more than one third of the patients (36%) reported that they received over- counter medications.

Table 2: Delineates the types and levels of physical disturbances among COPD patients, in relation to degree of breathlessness related to activities it was found that dyspnea grade 4 was the most common symptoms among patients (49%).The same table displays that orthopnea was a complaint among (90%)of the studied patients. On the same linecough and chest painwas reported by the majority of the patients (88%), (82%) respectively.

Table (3):reveals thatslightly more than half of the studied patients, between52% to 54%, reported too much of the all investigated negative feelings while less than one fifth of the patients, between 14% to 17% reported that they had none of these negative feelings at all. Assessing social activity and daily living activity of the patients revealed that the largest proportion of them reported severe limitations regarding doing house work (81%), carrying groceries (76%),embarrassment on coughing (72%), shopping (68%), practice work completely(67.4%) and going to work (60.9%).
On the other hand, the most frequent activities that were reported to be not at all done were playing sports or games (40%), visits to socialize with friends or family (26%) and practice recreational activity (21%).

Table (4): Describes total scores and levels of physical, psychological and social disturbances among the studied patients.Regarding score of physical disturbance, it was revealed that respiratory disturbance score was the highest mean of all physical disturbances parameters (58.6± 19.9%), weak pelvic floor symptoms (18.7 ± 23.0%) and the least was the score of eating and swallowing problems (17.3 ± 19.3%).

On assessing the psychological aspects of the studied patients, it was revealed that their negative feelings score ranged between "0% to 100%" with a mean of (67.1 ± 38.7%) while positive feeling score ranged between 0% to 100% with a mean of (35.4 ± 37.5).

Social activity disturbance scores of the studied patients ranged between "5.6% to 100%" with a mean of (71.7±25.1%). More than half of the patients (57%) had high score above 75% while less percentage (27%) had moderate score between "50% to less than 75%" while only 16% of patients had a low score less than 50%.

Table (5):delineates physical adaptation strategies used by studied patients. Regarding control of breathing, the most frequently used strategies were the use of maintenance and preventer medication even in stable conditions (75%) and keeping recovery position (65%). Otherwise, strategies were nearly or not used at all.
Considering following methods to manage dyspnea, the majority of the patients used nearly all the strategies namely taking medication (100%). Regarding use of airway clearance strategies and cough management, nearly all patients used to evaluate color and amount of sputum (93%, 92% respectively).Half of the studied patients (54%) reported that they drink plenty of fluids, 38% of patients took medications for cough and 31% used to

receive cough herbalist. only small percentage of the patients (9%) tried to inhale warm air other strategies for clearance of airway were nearly used 2-3%.

Another physical adaption strategy is keeping bladder and bowel healthy all the studied patients (100%) took enough time to urinate for complete emptying their bladder. Moreover, nearly all patients (97%) used to go to toilet only when bladder is full or as needed and go to toilet before bed time (80%).

Table (6): reveals distribution of psychosocial adaptation strategies used by the studied patients.Regarding stress reduction strategy, the most commonly used methods were reading or listening to Koran and praying (62%) followed by watching TV (59%), drinking plenty of water (54%), maintaining social network (49%), eating well balanced diet(42%) and time planning and management (26%).

The most commonly used methods for improvement of sexual activity were avoiding perfumes, powders and hair spray (60%), plan sexual activity (56%), change positions if feel uncomfortable (48%), stop and rest if feel anxiety or fatigue (41%) and avoid factors that increase fatigue (38%). About one third of the studied patients used a reliever puffer before or during sexual activity (31%), while a quarter used to receive inhale before sexual activity (25%) and use support from pillows or furniture (25%).

Table (7): Shows that the total score for physical adaptation strategies ranged between "20.5% to 54.9%" with a mean of (36.6±6.9%). Nearly about (95%)of the studied patients had low score; less than 50% while only 5% of patients had a moderate score; 50% to less than 75%.

The total psychosocial adaptation score ranged between "13% to 69.6%" with a mean of (33.8±12.1%). The majority of the patients (89%) had low score less than 50% while about (11%) of the patients had a moderate score between 50% to less than 75%.

Table (8): Delineates correlation between scores of physical and psychosocial disturbances and scores of adaptation strategies used by the studied patients. The physical disturbance score was negatively correlated with some of the physical adaptation scores namely, energy conservation score (r= - 0.344, p<0.0001) and seeking medical help (r= - 0.322, p= 0.001). Moreover, the **physical disturbance score** was negatively correlated with the total **physical adaptation strategies score** (r= - 0.277, p= 0.005).

Similarly, the **physical disturbance score** was negatively correlated with some of the **psychosocial adaptation strategies**so the total psychosocial adaptation score (r= - 0.325, p=0.001). The physical disturbance score was also negatively correlated with score of reducing stress (r= - 0.385, p< 0.0001) and adaptation in daily living activities (r= - 0.231, p=0.021). Meanwhile, the **psychological disturbance** score did not show correlation with scores of any of the studied adaptation strategies.

On the other hand, the **socia**l **disturbance** score was positively correlated with control breathing score (r = 0.355, p<0.0001) and negatively correlated with scores of the following **physical adaptation strategies**; managing flare up (r = - 0.257, p=0.01), eating healthy diet (r = - 0.264, p=0.008), energy conservation (r = - 0.613, p<0.0001) and seeking medical help (r = -0.224, p=0.025).Generally, social disturbance score was negatively correlated with the total physical adaptation strategies score (r = - 0.378, p< 0.001).

Discussion: Chronic obstructive pulmonary disease is a major cause of disability that dramatically alters the well-being of the patients as well as their quality of life. Regarding Sex, the present study illustrated that the majority of subjects were males. And the minorities were females. The difference between men and women is mostly due to differences in smoking habits. This is supported by the study of Zhong et al., (2007) in China who stated that, the prevalence of COPD was significantly higher in men than in women. [(28)]

In relation to patient's physical disturbances, dyspnea was the most frequently reported complaints followed by cough, orthopnea, wheezy chest, chest pain and sleep disturbance. This result is in harmony with those of Kesten (2005), who found that dyspnea was the first and the most troublesome symptom reported by COPD patients followed by cough and sleep disturbance . Moreover, a study done in Malaysia (2005) supported these findings and stated that more than three –quarters of the COPD patients had dyspnea and one half of them had cough. [(29, 30)]

Regarding physical **disturbance** of weak pelvic floor symptoms, it was revealed that nearly half of the studied patients suffer from stress incontinence. This is in accordance with the study of Hrisanfow and Hagglund (2011) who stated that the most common type of incontinence in women was stress incontinence (52·4%) and in men postmicturition dribbling (66·3%) and indicated that urinary incontinence content should be included in care plans for patients living with COPD. In addition, the results imply that nurses and physicians working in primary health care should ask patients with chronic obstructive pulmonary disease about urinary incontinence and then offer appropriate assessment and management of it. [(31)]

Our study shows that 54% of patients suffer from too much negative feeling of depression and 17% feel positive feeling Marsus et al., (2014) stated that anxiety and depression are common and important comorbidities

in patients with COPD. The pathophysiology of these psychological comorbidities in COPD is complex and possibly explained by common risk factors, response to symptomatology and biochemical alterations. The presence of anxiety and/or depression in COPD patients is associated with increased mortality, exacerbation rates, length of hospital stay, and decreased quality of life and functional status. There is currently no consensus on the most appropriate approach to screening for anxiety and depression in COPD. [32]

Regarding social and ADLs disturbances it was revealed that more than half of the patients (57%) had high score above 75% which mean presence of severe limitation in social activity and daily living activities. This is supported by the study of Gutierrez et al., (2007) who studied 1057 patients (95.2% male) with a mean Standard Deviation(SD) age of 67 (9) years and stated that the main clinical symptom was dyspnea (experienced by 97.3% of patients) and mild and moderate dyspnea predominated. The activities that were affected most were sport and leisure, habitual physical activity, and sex life (major impact reported by 52.5%, 30.3%, and 20.2% of patients, respectively). [33]

Regarding adaptation strategies nearly all the studied patients (95%) had low score; less than 50% while only 5% of patients had a moderate score; 50% to less than 75%.The least mean scores were obtained in physical adaptation strategies namely exercising (11±26.3%), eating healthy diet (18.1±15.8%), control breathing (20.1±9.8%) and seeking medical help (20.2±9.2%).

Regarding control of breathing it obtained the least mean score which may be related to lack of knowledge about breathing strategies, effective use of inhaler before, during and after care of the nebulizer, lack of health resources and low socioeconomic status which affect patient's adherence to treatment. This is congruent with the study of Gosselink (2004) who stated that breathing strategies are important to relieve symptoms and ameliorate adverse physiological effects by increasing strength and endurance of the respiratory muscles; optimizing the pattern of thoracoabdominal motion; and reducing dynamic hyperinflation of the rib cage and improving gas exchange. Evidence exists to support the effectiveness of pursed lips breathing, forward leaning position, active expiration and inspiratory muscle training. Careful patient selection, proper and repeated instruction and control of the strategies, and assessment of the effects are necessary. [34]

People need to know appropriate responses to COPD exacerbations (self-response). COPD action plans are guidelines for appropriate response. An action plan, developed collaboratively with the primary care provider or pulmonary specialist, identifies appropriate responses to worsening symptoms. United Kingdom (U.K.) guidelines recommend prescribing oral corticosteroid and antibiotic tablets for patients to self-administer if increased dyspnea interferes with activities of daily living. In contrast, U.S. clinical guidelines limit the decision to begin medications to providers. [35]

Psychosocial adaptation strategies show that the majority of the studied patients had low level of adaptation since patients express that they were unable to manage their psychosocial problems because they feel frustration and loss of interest in life as a result of their functional impairment, socioeconomic problems, loss of their family role and inability to provide family requirement that result from respiratory disease and feel uncomfortable about being dependent on their relatives because of the symptoms of COPD. They also stated that they could not be in crowded places and so they postpone their social lives. This is in accordance with the study of Dudley et al., (1980)[36] who stated that anxiety over dyspnea-producing activities may promote a maladaptive sedentary lifestyle.

In addition to the study of (Bailey 2004) who stated that anxiety in COPD is closely associated with the fear of being breathless during self-management activities and the anxiety–dyspnea cycle is a common phenomenon. [37]

Developing an adequate social support system, learning stress reduction strategies (e.g., muscle relaxation, imagery, yoga), and addressing specific problems (e.g., sexual intimacy, partner/spousal dependency) are addressed in pulmonary rehabilitation. Although mild or moderate levels of anxiety or depression related to the disease process may improve with pulmonary rehabilitation, patients with significant psychiatric disease should be referred for appropriate professional care. [36]

The present study shows that an increase in physical and psychosocial adaptation strategies and adequate self-management are associated with decrease levels of physical and social disturbancesand decrease number of exacerbation and hospitalization, while no improvement occurred in psychological problems.Loriget al., (1999) evaluated the effectiveness (changes in health behaviors, health status, and health service utilization) of a self-management program for chronic disease designed for use with a heterogeneous group of chronic disease patients.[38]

In addition the study of Simpson et al., (2008) concluded that Physical fatigue and fear of physical activity are the key elements which lead to decreased physical functioning and ultimately diminish patients' ability to manage their COPD on a day to day basis. COPD patients experience fatigue as a consequence of increased respiratory and metabolic demands, disruption to sleep and rest, and anxiety and the emotional strain associated with living with a progressive and debilitating illness and that individuals suffering from depression

can experience feelings of inertia and find it difficult to motivate them to engage in self-management activities. (39)

Conclusion: Based on the results of the current study, it has been concluded thatCOPD is a disabling disease which affects the adaptation and coping ability of the patients. It has a negative impact not only on the physical activities but also on the psychological, social and financial aspects of life which enter COPD patients in dilemma and affect their ability to adapt with the disturbances caused by the disease. Also it can be concluded that pulmonary rehabilitation program must be tailored and added to the care plan of COPD patients in order to enhance their adaptation ability.

Recommendations:

- Development of structured health education and rehabilitation programs using different educational media for COPD patients.

-Health education and rehabilitation programs for COPD patients should be integral part of nurse's job description.

-Pulmonary rehabilitation centers must be established in primary health care settings.

References

[1]. Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. GOLD 2005. Available from: http://www.goldcopd.com/Guide. [Accessed On: 15 Mar, 2016].

[2]. Aras A, Tel H. Determination of perceived social support for patients with COPD and related factors. Turkish Thorax J 2009; 10 (2): 63-8.

[3]. Hoyert DL, Xu JQ. Deaths: preliminary data for 2011. Natl Vital Stat Rep 2012;61(6):1-65.

[4]. Fletcher MJ, Upton J, Taylor-Fishwick J, Buist SA, Jenkins C, Hutton J, et al. COPD uncovered: an international survey on the impact of chronic obstructive pulmonary disease (COPD) on a working age population. BMC Public Health 2011; 11: 612.

[5]. World Health Organization (WHO). The global burden of disease 2004 Update. Geneva: WHO; 2004.

[6]. Mannino DM, Buist AS. Global burden of COPD: risk factors, prevalence, and future trends. Lancet 2007; 370: 765-73.

[7]. DiBonaventura M, Paulose-Ram R, Su J, McDonald M, Zou KH, Wagner JS, et al. The impact of COPD on quality of life, productivity loss, and resource use among the elderly United States workforce. COPD 2012;9(1):46-57.

[8]. Nishimura K, Oga T, Ikeda A, Hajiro T, Tsukino M, Koyama H. Comparison of health-related quality of life measurements using a single value in patients with asthma and chronic obstructive pulmonary disease. J Asthma 2008;45(7):615-20.

[9]. McEwen BS. Physiology and neurobiology of stress and adaptation: central role of the brain. Physiol Rev 2007;87(3):873-904.

[10]. Basavanthappa BT. Fundamentals of nursing. 1sted. India: Jaypee Brothers; 2003. pp.395-7.

[11]. Honorable S, Sullivan M, Grand F. Improving health together. Minister of Health and Community Services 2011. Available from: http://www.health.gov-.nl.ca/health/chronic disease. [Accessed On: 15 Mar, 2016].

[12]. Arten F, Margreet S, John W. Respiratory rehabilitation Apractitioner's guide. London: Brunner Routledge; 2007. pp.124-48.

[13]. Garvey C, Hanania NA, Altman P. Optimizing care of your patients with COPD. Nurs Res Rev 2014; 4: 7-18.

[14]. Jung KS. Management of COPD. Korean J Med 2009; 77(4):422-8.

[15]. Meguro M, Barley EA, Spencer S, Jones PW. Development and validation of an improved COPD-specific version of the St George's Respiratory Questionnaire. Chest 2006; 132: 456-63.

[16]. Jones PW, Harding G, Berry P, Wiklund I, Chen WH, Kline Leidy N. Development and first validation of the COPD Assessment Test. EurRespir J 2009; 34: 648–54.

[17]. Bestall JC, Paul EA, Garrod R, Garnham R, Jones PW, Wedizcha JA. Usefulness of the Medical Research Council (MRC) dyspnoea scale as a measure of disability in patients with chronic obstructive pulmonary disease. Thorax 1999; 54:581-6.

[18]. Gould D1, Kelly D, Goldstone L, Gammon J. Visual Analogue Scale (VAS). J ClinNurs 2001;10: 697-706.

[19]. Tseng BY, Gajewski BJ, Kluding PM. Reliability, responsiveness and validity of the visual analog fatigue scale to measure exertion fatigue in people with chronic stroke: a preliminary study. Stroke Res Treat 2010; 2010: 412964.

[20]. Gandek B, Ware JE, Aaronson NK, Apolone G, Bjorner JB, Brazier JE, et al. Cross-validation of item selection and scoring for the SF-12 Health Survey in nine countries: results from the IQOLA Project: international quality of life assessment. J ClinEpidemiol 1998; 51: 1171–8.

[21]. Dowson C, Laing R, Barraclough R, Town I, Mulder R, Norris K, et al. The use of the Hospital Anxiety and Depression Scale (HADS) in patients with chronic obstructive pulmonary disease: a pilot study. N Z Med J 2001; 114: 447-9.

[22]. Beck A, Ward C, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. Arch Gen Psychiatry 1961; 4: 561–71.

[23]. Lewis SL, Dirksen SR, Heitkemper MM, Bucher L. Textbook medical surgical nursing, assessment and management of clinical problems. Vol.1. 8thed. St. Louis: Mosby; 2011. pp. 610-30.

[24]. Guy's and St Thomas NHS Foundation Trust. Physiotherapy department: Chronic cough and urinary incontinence. Guy's and St Thomas NHS Foundation Trust 2013. Available from: http://www.guysandstthomas.nhs.uk/resources/patient-information/therapies/physiotherapy/chronic-cough-urinary-incontinence.pdf. [Accessed On: 14 Apr,2016].

[25]. Burns BH, Howell JB. Disproportionately severe breathlessness in chronic bronchitis. Q J Med 1969; 38: 277–94.

[26]. Bourbeau J, van der Palen J. Promoting effective self-management programmes to improve COPD. EurRespir J 2009; 33: 461–3.

[27]. Izadi T, Hajbaghery M. Effect of pursed lips breathing on ventilation and activities of daily living in patients with COPD. Webmed Central Rehabilit 2011;2(4):1904-15.

[28]. Zhong N, Wang C, Yao W, Chen P, Kang J, Huang S, et al. Prevalence of chronic obstructive pulmonary disease in china. a large, population – based survey. Am J RerpirCrit Care Med 2007; 176(8):753-60.

[29]. Kesten S, Menjoge S. Patient-reported symptoms of COPD in clinical trial. Chest 2005;2(1):5-9.

[30]. Loh LC, Lai CH, Liew OH, Siow Y. Symptomatology and health status in patients with COPD. Med J Malaysia 2005; 60(5):570-7.

[31]. Hrisanfow E, Hagglund D. The prevalence of urinary incontinence among women and men with chronic obstructive pulmonary disease in Sweden. J ClinNurs 2011;20(13-14):1895-905.

[32]. Pumar MI, Gray CR, Walsh JR, Yang IA, Rolls TA, Ward DL. Anxiety and depression-important psychological comorbidities of COPD. J Thorac Dis 2014; 6(11): 1615-31.

[33]. Alvarez-Gutiérrez FJ, Miravitlles M, Calle M, Gobartt E, López F, Martín A. Impact of chronic obstructive pulmonary disease on activities of daily living: results of the multicenter EIME Study. Arch Bronconeumol 2007; 43(2): 64-72.

[34]. Gosselink R. Breathing strategies in patients with chronic obstructive pulmonary disease (COPD). 2004; 1(3): 163-72.

[35]. Institute for Clinical Systems Improvement (ICSI). Health Care Guideline: Diagnosis and Management of Chronic Obstructive Pulmonary Disease (COPD). ICSI 2009. Available from; from:ttp://www.icsi.org/chronic_obstructive_pulmonary_disease/chronic_obstructive_pulmonary_disease_2286.html. [Accessed On: 15 Mar, 2016].
[36]. Dudley DL, Glaser EM, Jorgenson BN, Logan DL. Psychosocial concomitants to rehabilitation in chronic obstructive pulmonary disease. Part I. Psychosocial and psychological considerations. Chest 1980; 77: 413-20.
[37]. Bailey PH. The dyspnea–anxiety–dyspnea cycle—COPD patients' stories of breathlessness, it's scary/when you can't breathe. Qual Health Res 2004; 14 (6): 760–78.
[38]. Lorig KR, Sobel DS, Stewart AL, Brown BW Jr, Bandura A, Ritter P, et al. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: a randomized trial. Med Care 1999; 37(1): 5-14.
[39]. Simpson AC, Rocker GM. Advanced chronic obstructive pulmonary disease, rethinking models of care. QJM 2008; 101(9): 697–704.

Table (1): Frequency Distribution of Biosociodemographic Characteristics of COPD Patients.

Biosociodemographic characteristics		**Frequency of Studied patients (n=100)**	
		No.	**%**
Age (years)	40 <50	21	21.0
	50≤60	79	79.0
	Min-Max (Mean ± SD)	40.0-60.0(53.2±4.5)	
Gender	Female	17	17.0
	Male	83	83.0
Level of education	Illiterate	42	42.0
	Read and write	17	17.0
	Primary	5	5.0
	Preparatory	5	5.0
	Secondary	29	29.0
	University	2	2.0
Marital status	Married	83	83.0
	Single	7	7.0
	Widow	6	6.0
	Divorced	4	4.0
Occupation	Not working	54	54.0
	Professional	5	5.0
	Skilled	13	13.0
	Manual	24	24.0
	Trade	4	4.0
Occupational exposure to dust	No	28	28.0
	Yes	72	72.0
Residence	Urban	32	32.0
	Rural	68	68.0
Number of family members	2-3	40	40.0
	4-5	39	39.0
	6-7	13	13.0
	8-9	8	8.0
Number of rooms in house	1-2	69	69.0
	3-4	31	31.0

CONT. Table (1): Frequency Distribution of Biosociodemographic Characteristics of COPDPatients.

Clinical characteristics		**Frequency of studied patients (n=100)**	
		No.	**%**
COPD duration (years)	Less than 5	22	22.0
	5-	29	29.0
	10-	21	21.0
	15-	16	16.0
	20 or more	12	12.0
	Min-Max(Mean ± SD)	0.3-32.0(9.9±6.4)	
Number of hospitalization during last year	None	13	13.0
	1-2	30	30.0
	3-4	31	31.0
	5 or more	26	26.0
Number of attacks of exacerbations in a year	1-	22	22.0
	10-	14	14.0
	20-	24	24.0
	30-	8	8.0
	40 or more	32	32.0
Prescribed medications received at home	Bronchodilators	85	85.0
	Corticosteroids	43	43.0
	Cough suppressants	53	53.0
	Mucolytic	4	4.0
	Analgesics	13	13.0

	Antibiotics	30	30.0
Mode of administration of treatment	Oral tables	100	100.0
	Inhalers	100	100.0
	Nebulizer at home	23	23.0
Compliance on receiving treatment	Compliant	77	77.0
	Not compliant	23	23.0
	Expensive	20	20.0
	Forget medication	1	1.0
	Other causes	2	2.0
Over counter medication	No	64	64.0
	Yes	36	36.0
Family history of COPD	No	91	91.0
	Yes	9	9.0
	Mother	4	4.0
	Father	5	5.0
Smoking habit			
Smoking habit	Non-smoker	6	6.0
	Smoker	22	22.0
	Quitter	55	55.0
	Passive smoker	17	17.0
Type of smoking [n=94]	Cigarettes	86	91.5
	Hubble bubble	32	34.0
	Drugs	5	5.3
Age of starting smoking (years) [n=77]	10-<15	7	9.1
	15-≤20	70	90.9
Number of packets smoked daily [n=77]	0.5-<1	37	48.1
	1-≤2	40	51.9

Table (2): Frequency Distribution of Types and Levels of Physical Disturbances among the Studied Patients.

Physical Assessment Items	Levels of Physical disturbances	Frequency of Studied patients (n=100)	
		No.	%
Difficulty in breathing	No	0	0.0
	Yes	100	100.0
Degree of breathlessness related to activities	Grade 2	10	10.0
	Grade 3	33	33.0
	Grade4	49	49.0
	Grade 5	8	8.0
Suffer from orthopnea	Not at all	10	10.0
	A few days	27	27.0
	Most days	20	20.0
	All days	43	43.0
Suffer from cough	A few days	36	35.0
	Most days	39	39.0
	All days	25	25.0
Suffer from chest pain	Not at all	18	18.0
	Few days	40	40.0
	Most days	33	33.0
	All days	9	9.0
Physical assessment of eating and swallowing problems			
Suffer from coughing or choking after swallowing	Not at all	62	62.0
	Few days	20	20.0
	Most days	9	9.0
	All days	9	9.0
Suffer from increased shortness of breath during meal	Not at all	52	52.0
	Few days	19	19.0
	Most days	20	20.0
	All days	9	9.0
Take longer time to finish meals	Not at all	96	96.0
	Few days	1	1.0
	Most days	3	3.0
Getting more fatigued after eating and drinking	Not at all	70	70.0
	Few days	15	15.0
	Most days	11	11.0
	All days	4	4.0

CONT. Table (2): Frequency Distribution of Types and Levels of Physical Disturbances among the Studied Patients.

Physical Assessment Items	Levels of Physical disturbances	Frequency of Studied patients (n=100)	
		No.	%
Physical assessment of weak pelvic floor symptoms			
Suffer from Stress incontinence	Not at all	45	45.0
	Few days	26	26.0
	Most of days	12	12.0
	All days	17	17.0
Suffer from urge incontinence	Not at all	68	68.0
	Few days	16	16.0
	Most of days	4	4.0
	All days	12	12.0
Suffer from urinary frequency	Not at all	84	84.0
	Few days	3	3.0
	Most of days	1	1.0
	All days	12	12.0
Suffer from constipation/straining	Not at all	89	89.0
	Few days	5	5.0
	Most of days	1	1.0
	All days	5	5.0
cognitive dysfunction and sleep disturbance & fatigue			
Suffer from difficulty maintaining concentration during the day	Not at all	84	84.0
	Few days	14	14.0
	Most of days	2	2.0
Suffer from poor memory	Not at all	80	80.0
	Few days	14	14.0
	Most of days	3	3.0
	All days	3	3.0
Suffer from morning headache	Not at all	43	43.0
	Few days	26	26.0
	Most of days	20	20.0
	All days	11	11.0
Severity of morning headache [n=57]	Mild	19	33.33
	Moderate	10	17.54
	Severe	28	49.13
Wake up due to cough or breathing	Not at all	6	6.0
	Few days	28	28.0
	Most of days	43	43.0
	All days	23	23.0
Suffer from fatigue as a result of the disease	Not at all	6	6.0
	Few days	13	13.0
	Most of days	46	46.0
	All days	35	35.0
Intensity of fatigue [n=94]	Moderate	25	26.6

Table (3): Frequency Distribution of Types and Levels of Psychosocial Disturbances of the Studied Patients.

A- Psychological Assessment of the Studied Patients with COPD.

Psychological Assessment Items	Frequency of Studied patients (n=100)							
	Not at all		Mild		Moderate		Too Much	
	No.	%	No.	%	No.	%	No.	%
➢ **Negative feelings**								
Fear or panic when cannot get breath	16	16.0	20	20.0	10	10.0	54	54.0
Frail or invalid because of chest condition.	16	16.0	20	20.0	10	10.0	54	54.0
Little interest and pleasure in doing things.	16	16.0	20	20.0	10	10.0	54	54.0
Depressed, or hopeless.	16	16.0	20	20.0	10	10.0	54	54.0
Life is not worth living.	17	17.0	20	20.0	10	10.0	53	53.0

A very nervous person.	14	14.0	22	22.0	10	10.0	54	54.0
Miserable and sad.	17	17.0	20	20.0	11	11.0	52	52.0
➢ **Positive feelings**								
Happy.	45	45.0	17	17.0	21	21.0	17	17.0
Enjoy a good book or radio or TV Program.	45	45.0	19	19.0	21	21.0	15	15.0
Laugh and see the funny side of things.	45	45.0	19	19.0	21	21.0	15	15.0
Look forward with enjoyment to things.	45	45.0	19	19.0	21	21.0	15	15.0
Feel very cheerful.	46	46.0	18	18.0	21	21.0	15	15.0
Full of pep.	46	46.0	18	18.0	21	21.0	15	15.0
Calm and peaceful.	46	46.0	18	18.0	21	21.0	15	15.0

B- Social Activity Assessment of the Studied Patients with COPD.

SocialActivity Assessment Items	**Frequency of Studied patients (n=100)**							
	Not at all		**Mild**		**Moderate**		**Severe**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
1. Do housework.	7	7.0	4	4.0	8	8.0	81	81.0
2. Do Self-care practice (bathe, wash or Dress).	16	16.0	8	8.0	26	26.0	50	50.0
3. Go to work [n=46].	4	8.7	8	17.4	6	13.0	28	60.9
4. Practice work completely [n=46].	3	6.5	7	15.2	5	10.9	31	67.4
5. Visit or socialize with friends or family.	26	26.0	18	18.0	22	22.0	34	34.0
6. Practice Sexual activity [n=83].	10	12.0	8	9.6	30	36.1	35	42.2
7. Leisure and recreational activities.	21	21.0	22	22.0	13	13.0	44	44.0
8. Shop and do errands.	9	9.0	11	11.0	12	12.0	68	68.0
9. Lift or carry groceries.	4	4.0	7	7.0	13	13.0	76	76.0
10. Play sports or games.	40	40.0	8	8.0	2	2.0	50	50.0
11. Be dependent on yourself in matters of life.	14	14.0	14	14.0	34	34.0	38	38.0
12. Cough or breathing causing embarrassment in public.	5	5.0	9	9.0	14	14.0	72	72.0

Table (4): Description of Total Scores and Levels of Physical, Psychological and Social Disturbances among the Studied Patients.

Physical and Psychosocial disturbance Items	**Levels of Disturbances**							
	Disturbance score (%)							
	Min-Max	**Mean±SD**	**Low (<50%)**		**Moderate (50-<75%)**		**High (75%≤)**	
			No.	**%**	**No.**	**%**	**No.**	**%**
Physical disturbance								
Respiratory disturbances	16.7-100.0	58.6±19.9	27	27.0	49	49.0	24	24.0
Eating and swallowing problems	0.0-83.3	17.3±19.3	88	88.0	9	9.0	3	3.0
Weak pelvic floor symptoms	0.0-83.3	18.7±23.0	85	85.0	9	9.0	6	6.0
Cognitive dysfunction , sleep disturbance and fatigue	0.0-66.7	35.9±14.7	81	81.0	19	19.0	0	0.0
Total physical disturbances score	**5.9-76.5**	**32.8±13.8**	**89**	**89.0**	**10**	**10.0**	**1**	**1.0**
A-Psychological disturbance								
Negative feelings	0.0-100.0	67.1±38.7	36	36.0	10	10.0	54	54.0
Positive feeling	0.0-100.0	35.4±375	64	64.0	21	21.0	15	15.0
Total psychological disturbances score	**33.3-100.0**	**51.2±9.4**	**13**	**13.0**	**86**	**86.0**	**1**	**1.0**
B- Social disturbance								
Total social disturbances score	**5.6-100.0**	**71.7±25.1**	**16**	**16.0**	**27**	**27.0**	**57**	**57.0**

Table (5): Frequency Distribution of Physical Adaptation Strategies Used by the Studied Patients.

Physical Adaptation Strategies	**Frequency of Studied patients (n=100)**			
	Not done		**Done**	
	No.	**%**	**No.**	**%**
1- Control breathing				
Use maintenance and preventer medication even in stable condition	25	25.0	75	75.0
Breathing exercises	98	98.0	2	2.0
Recovery positions	40	40.0	60	60.0
Effective use of inhaler	88	88.0	12	12.0
Keep oxygen cylinder and use it as needed	97	97.0	3	3.0
Follow before, during and after care of the nebulizer N=23	13	13.0	10.0	10.0
Pace yourself	78.0	78.0	22	22.0
Follow rehabilitation program	99.0	99.0	0.1	0.1
Committed in attendance of rehabilitation program	100.0	100.0	0.0	0.0
2- Following methods to manage dyspnea				
Take semi fowler position and elevate head 90 degree	18	18.0	82	82.0
Open door, windows for ventilation	9	9.0	91	91.0
Remove tight clothes	11	11.0	89	89.0

Progressive relaxation technique for body muscles	99	99.0	1	1.0
Take medication(bronchodilators)	0	0.0	100	100.0
Take oxygen in the nearest hospital or unit or at home	54	54.0	46	46.0
Avoid any effort increase breathlessness	6	6.0	94	94.0
3- Using airway clearance strategies and cough management				
Physiotherapy: percussion	97	97.0	3	3.0
Physiotherapy : Vibration by help of family member	98	98.0	2	2.0
Physiotherapy: Coughing and breathing exercise	97	97.0	3	3.0
Postural drainage	98	98.0	2	2.0
Drink plenty of fluids	46	46.0	54	54.0
take cough herbalists like Altelio and Nigella sativa	69	69.0	31	31.0
Inhale warm "steam" air	91	91.0	9	9.0
Take medication for cough	62	62.0	38	38.0
Make evaluation for color of sputum	7	7.0	93	93.0
Make evaluation for amount of sputum	8	8.0	92	92.0

CONT. Table (5): Frequency Distribution of Physical Adaptation Strategies Used by the Studied Patients.

Physical Adaptation Strategies	**Frequency of Studied patients (n=100)**			
	Not done		**Done**	
	No.	**%**	**No.**	**%**
9-Energy conservation				
a--Control and coordinate breathing with daily activities				
1. By Breathe IN before starting and Breathe OUT as you complete the activity	100	100.0	0	0.0
2. Pace myself by alternate light and heavy activities and use slow, rhythmic movements.	78	78.0	22	22.0
3. Spread heavier tasks throughout the day, week and month.	72	72.0	28	28.0
4. use recovery positions when feeling shortness of breath,	21	21.0	79	79.0
b-Reducing strenuous movements:				
1- Keep arms and body close to the activity I perform.	69	69.0	31	31.0
2- Carry objects close to body.	79	79.0	21	21.0
3- Organize equipment or food to be within easy reach.	57	57.0	43	43.0
4- Keep most activities between waist and shoulder level.	80	80.0	20	20.0
5- Store commonly used items on middle shelves between waist and shoulders.	94	94.0	6	6.0
6- Work at benches that are at waist height.	75	75.0	25	25.0
7- Use long handled equipment(a bathing brush)	93	93.0	7	7.0
c-Avoiding heavy lifting				
1. push rather than pull	71	71.0	29	29.0
2. Let bigger muscles do the work – squat with legs, avoid bending back.	82	82.0	18	18.0
3. Ask for help	40	40.0	60	60.0
4. Divide the load	52	52.0	48	48.0
d-Sitting when possible to perform activities as while ironing, washing dishes	49	49.0	51	51.0
e-Taking frequent rest breaks	58	58.0	42	42.0
f- Planning and preparing before performing tasks				
1. Be patient with yourself and set achievable goals.	75	75.0	25	25.0
2. Break jobs into smaller steps.	67	67.0	33	33.0
3. Prepare and prioritize.	88	88.0	12	12.0
4. Use a diary or calendar to plan daily, weekly and monthly tasks.	97	97.0	3	3.0
5. Put items where they can be found easily and quickly.	61	61.0	39	39.0
g-Avoiding extremes of temperature				
1- Avoid strenuous tasks, particularly in hot weather.	44	44.0	56	56.0
2- Where possible, control the temperature in the environment by using fans, air conditioners and heaters.	9	9.0	91	91.0
3- Reduce steam – open doors, windows.	12	12.0	88	88.0

CONT. Table (5): Frequency Distribution of Physical Adaptation Strategies Used by the Studied Patients.

Physical Adaptation Strategies	**Frequency of Studied patients (n=100)**			
	Not done		**Done**	
	No.	**%**	**No.**	**%**
10- Keeping bladder and bowel healthy				
Drink at least six to eight cups (one and a half liters) of fluid a day	70	70.0	30	30.0
Limit the amount of caffeine	69	69.0	31	31.0
Go to the toilet only when bladder is full and as needed.	3	3.0	97	97.0
Go to the toilet before going to bed	20	20.0	80	80.0
Take enough time when urinating so that bladder can empty completely.	0	0.0	100	100.0
Keep bowels regular and avoid constipation.	22	22.0	78	78.0
Avoid straining when defecating.	M	25.0	75	75.0
Do pelvic floor exercises	97	97.0	3	3.0
11- Treatment of obstructive sleep apnea (n=2)				
Controlling weight	1	50.0	1	50.0
Avoid smoking up to two hours before going to sleep	1	50.0	1	50.0

Use nasal decongestant sprays.	2	100.0	0	0.0
Seek medical help	0	0.0	2	100.0
12- Reducing osteoporosis risk				
Sensible sun exposure.	79	79.0	21	21.0
Add calcium to diet.	78	78.0	22	22.0
Quit smoke.	45	45.0	55	55.0
Follow Orthopedic doctor	99	99.0	1	1.0
13- Using Strategies to improve sleep				
Avoid going to bed until feeling tired.	100	100.0	0	0.0
Develop specific bedtime rituals and stick to them.	83	83.0	17	17.0
Avoid exercise or strenuous activity immediately before bedtime.	22	22.0	78	78.0
Avoid caffeine.	69	69.0	31	31.0
Avoid nap.	74	74.0	26	26.0
Go to bed and get up at the same time every day, including on the weekends	70	70.0	30	30.0
Take a warm drink, a bath or reading before bed	75	75.0	25	25.0
Use the number of pillows under at bedtime to raise head.	30	30.0	70	70.0

Table (6): Frequency Distribution of Psychosocial Adaptation Strategies Used by the Studied Patients.

Psychosocial adaptation strategies	**Studied patients (n=100)**			
	Not done		**Done**	
	No.	**%**	**No.**	**%**
Reducing stress				
1- Practice any type of relaxation technique	99	99.0	1	1.0
2- Eat well balanced diet	58	58.0	42	42.0
3- Drink plenty of water	46	46.0	54	54.0
4- Regularly exercise with someone else.	98	98.0	2	2.0
5- Get plenty of sleep	85	85.0	15	15.0
6- Maintain your social network	51	51.0	49	49.0
7- Establish a routine in my life	83	83.0	17	17.0
8- Maintain interests and hobbies	81	81.0	19	19.0
9- Join a local patient support group.	100	100.0	0	0.0
10- Schedule time to relax in your daily or weekly	93	93.0	7	7.0
11- Watch football or listening to music	81	81.0	19	19.0
12- Plan and manage time.	74	74.0	26	26.0
13- Read or listen to the Koran and pray	38	38.0	62	62.0
14- Watch TV	41	41.0	59	59.0
15- Express feeling to close person	76	76.0	24	24.0
2-Treatment prescribed for depression includes psychological treatments or anti-depressant medication, or both.	100	100.0	0	0.0
3-Treatment prescribedfor anxiety psychosocial treatment or antianxiety medication or both.	100	100.0	0	0.0
Adaptation in daily living activities				
1- Sit on a high stool while cooking or ironing, rather than standing.	76	76.0	24	24.0
2-Shave or put on makeup. Put a mirror on a table. Sit and rest elbows	75	75.0	25	25.0
3- Use a bath seat while bathing.	33	33.0	67	67.0
4-Use bathroom exhaust fan or leave the door open when you shower.	83	83.0	17	17.0
5- Use a clear shower curtain if you feel closed in while showering.	100	100.0	0	0.0
6- Wear loose-fitting clothes that do not restrict the movements	27	27.0	73	73.0

CONT. Table (6): Frequency Distribution of Psychosocial Adaptation Strategies Used by the Studied Patients.

Psychosocial Adaptation Strategies	**Studied patients (n=100)**			
	Not done		**Done**	
	No.	**%**	**No.**	**%**
Making home easier to live				
A- Checking design and layout				
1. Keep rooms well ventilated, especially kitchen and bathroom	15	15.0	85	85.0
2. Arrange furniture so you can easily move around/sit down	28	28.0	72	72.0
3. Keep everyday used items close to hand or stored where easy to reach, particularly in the kitchen to avoid lifting, bending and stretching	43	43.0	57	57.0
4. Consider viability of adaptations and possible equipment	98	98.0	2	2.0
B-Checking ventilation and heating				
1. Keep the home well ventilated at all times	31	31.0	69	69.0
2. Fix the building repair problems that are causing damp or condensation	81	81.0	19	19.0
3. Make sure the home is well insulated	25	25.0	75	75.0
C-Checking safety and security				
1. Fit and maintain smoke alarms and carbon monoxide indicators	100.0	100.0	0	0.0
2. Keep floors clear of clutter and cables tidy	4	4.0	96	96.0
Maintenance and improvement of intimacy and sexual activity [n=70]				

1.	Plan sexual activity when you feel at your best in the day.	14	20.0	56	80.0
2.	Use massage to relieve muscle tension	68	97.1	2	2.9
3.	Cough and clear sputum prior to sexual activity.	70	100.0	0	0.0
4.	Use your reliever puffer before or during sexual activity.	39	55.7	31	44.3
5.	Ask your doctor about increasing your oxygen flow rate during sexual activity.	69	98.6	1	1.4
6.	Take the inhaler before sexual activity that prescribed by your doctor.	45	64.3	25	35.7
7.	If anxiety and fatigue develops, stop and rest briefly.	29	41.4	41	58.6
8.	Ensure adequate rests before and during sexual relations.	54	77.1	16	22.9
9.	Take passive role	60	85.7	10	14.3
10.	Avoid perfumes, powders and hair sprays.	10	14.3	60	85.7
11.	Avoid factors that will increase fatigue	32	45.7	38	54.3
12.	Talk to partner about positions that are more comfortable to avoid pressure on chest and stomach	62	88.6	8	11.4
13.	Use support from pillows and other furniture.	45	64.3	25	35.7
14.	Change positions if become uncomfortable.	22	31.4	48	68.6

Table (7): Description and Levels of Physical and Psychosocial Adaptation Strategies used by the Studied Patients.

Adaptation Items	**Levels of Adaptation Adaptation scores (%)**							
	Min-Max	**Mean±SD**	**Low (<50%)**		**Moderate (50-<75%)**		**High (75%≤)**	
			No.	**%**	**No.**	**%**	**No.**	**%**
Physical adaptation strategies								
Control breathing	0.0-44.0	20.1±9.8	100	100.0	0	0.0	0	0.0
Following methods to manage dyspnea	28.6-85.7	71.9±14.7	12	12.0	52	52.0	36	36.0
Using airway clearance strategies and cough management	0.0-90.0	32.7±14.8	85	85.0	13	13.0	2	2.0
Avoiding COPD triggers	5.9-70.6	45.9±14.7	53	53.0	47	47.0	0	0.0
Managing flare up	10.0-80.0	38.7±12.8	73	73.0	26	26.0	1	1.0
Eating Healthy diet	0.0-60.0	18.1±15.8	93	93.0	7	7.0	0	0.0
Managing eating and swallowing problems	12.5-100.0	51.8±25.9	46	46.0	28	28.0	26	26.0
Exercising	0.0-100.0	11.0±26.3	85	85.0	12	12.0	3	3.0
Energy conservation	8.0-84.0	35.1±19.1	74	74.0	22	22.0	4	4.0
Keeping bladder and bowel healthy	37.5-100.0	64.4±14.4	7	7.0	51	51.0	42	42.0
Treatment of obstructive sleep apnea (n=2)	50.0-50.0	50.0±0.0	0	0.0	2	100.0	0	0.0
Reducing osteoporosis risk	0.0-75.0	26.3±20.2	77	77.0	17	17.0	6	6.0
Using Strategies to improve sleep	0.0-75.0	34.5±15.8	71	71.0	27	27.0	2	2.0
Seeking medical help when:	0.0-66.7	20.2±9.2	99	99.0	1	1.0	0	0.0
Doing oxygen Safety Guidelines [n=3]	57.1-85.7	76.2±16.5	0	0.0	1	33.3	2	66.7
Total physical adaptation strategies score	**20.5-54.9**	**36.6±6.9**	**95**	**95.0**	**5**	**5.0**	**0**	**0.0**
Psychosocial adaptation strategies								
Reduce stress	0.0-70.6	23.3±17.2	92	92.0	8	8.0	0	0.0
Adaptation in daily living activities	0.0-83.3	34.3±17.4	70	70.0	27	27.0	3	3.0
Making home easier to live	22.2-77.8	53.0±14.5	32	32.0	66	66.0	2	2.0
Maintenance and improvement of intimacy and sexual activity [n=70]	0.0-64.3	36.8±16.8	47	67.1	23	32.9	0	0.0
Total psychosocial adaptation strategies score	**13.0-69.6**	**33.8±12.1**	**89**	**89.0**	**11**	**11.0**	**0**	**0.0**

Table (8): Correlation between Scores of Physical and Psychosocial Disturbances and Scores of Adaptation Strategies Used by the Studied Patients.

Adaptation strategies	Physical and Psychosocial Disturbances					
	Physical disturbances		Psychological disturbances		Social disturbances	
	r	P	r	P	r	P
Physical adaptation strategies						
Control breathing	0.138	0.17	-0.03	0.768	**0.355**	**0.0001***
Following methods to manage dyspnea	0.117	0.245	0.173	0.086	0.176	0.079
Using airway clearance strategies and cough management	-0.181	0.071	-0.78	0.439	-0.146	0.147
Avoiding COPD triggers	-0.011	0.911	0.07	0.491	-0.123	0.223
Managing flare up	-0.078	0.439	0.098	0.33	**-0.257**	**0.01***
Eating Healthy diet	-0.163	0.105	-0.145	0.149	**-0.264**	**0.008***
Managing eating and swallowing problems	0.153	0.13	-0.018	0.856	0.169	0.093
Exercising	-0.122	0.226	-0.155	0.124	-0.166	0.098
Energy conservation	**-0.344**	**0.0001***	-0.055	0.588	**-0.613**	**0.0001***
Keeping bladder and bowel healthy	-0.175	0.081	-0.035	0.726	0.131	0.194
Reducing osteoporosis risk	-0.063	0.531	0.001	0.996	-0.126	0.212
Using Strategies to improve sleep	0.133	0.186	0.042	0.675	-0.075	0.458
Seeking medical help when:	**-0.322**	**0.001***	-0.056	0.581	**-0.224**	**0.025***
Total physical adaptation strategies score	**-0.277**	**0.005***	-0.057	0.573	**-0.378**	**0.0001***
Psychosocial adaptation strategies						
Reducing stress	**-0.385**	**0.0001***	-0.137	0.173	**-0.668**	**0.0001***
Adaptation in daily living activities	**-0.231**	**0.021***	-0.162	0.108	**-0.391**	**0.0001***
Making home easier to live	-0.164	0.103	0.037	0.717	-0.138	0.17
Maintenance and improvement of intimacy and sexual activity [n=70]	-0.173	0.151	-0.048	0.696	**-0.424**	**0.0001***
Total psychosocial adaptation strategies score	**-0.325**	**0.001***	-0.122	0.226	**-0.601**	**0.0001***

r: Spearman Rho correlation coefficient *significant at P≤0.05

Mona Ali Hassan Eladham "Physical and Psychosocial Adaptation Strategies of Patients with Chronic Obstructive Pulmonary Disease”.” IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. 7, no.4 , 2018, pp. 76-89.