ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 11, Issue, 10, pp.7472-7476, October, 2019

DOI: https://doi.org/10.24941/ijcr.36846.10.2019

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

THE INFLUENCE OF EMPOWERMENT-BASED EDUCATION ON INCREASING OF SELF-CARE IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS (COPD)

***[1]Mersi Ekaputri, [2]Dewi Elizadiani Suza and [2]Yesi Ariani**

[1]Master Program, Faculty of Nursing, Universitas Sumatera Utara, Medan, Indonesia
[2]Lecturer, Faculty of Nursing, Universitas Sumatera Utara, Medan, Indonesia

ARTICLE INFO

Article History:
Received 14th July, 2019
Received in revised form
19th August, 2019
Accepted 25th September, 2019
Published online 30th October, 2019

Key Words:

COPD,
Education,
Patient Empowerment,
Self-care.

**Corresponding author: Mersi Ekaputri*

ABSTRACT

Background: Chronic Obstructive Pulmonary Disease (COPD) is a progressive chronic disease, so the patients are disturbed burdened. A chronic care model is very needed in the form of educational efforts based on patient's empowerment. ***Objective:*** To identify the effect of empowerment-based education on improving the self-care of patients with chronic obstructive pulmonary disease (COPD). ***Methods:*** the study used quasi-experimental with one group pretest-postest design. Fourty eight respondents were selected using consecutive sampling. COPD self-care questionnaire research instrument (COPDSC-C) has been tested for validity by 3 experts and the reliability of Cronbach Alpha self-care was 0.90. The data analysis were used frequency distribution and Wilcox on Signed Rank Test. ***Results:*** The self-care before intervention with adequate value category was 14.60% and with inadequate value category was 85.40%. The self-care after intervention had an adequate value of 95.80% and an inadequate value of 4.20%. There was a value of difference and increase of the patients' self-care between before and after the intervention of empowerment-based education with p value < 0.05. ***Conclusion:*** Empowerment-based education intervention has an effect on the increasing self-care of patients with COPD.

Citation: Mersi Ekaputri, Dewi Elizadiani Suza and Yesi Ariani. **2019.** "The influence of empowerment-based Education on increasing of Self-Care in Chronic Obstructive Pulmonary Disease Patients (COPD)", *International Journal of Current Research*, 11, (03) , xxxxxx-xxxxxx.

INTRODUCTION

The World Health Organization (WHO) chronic obstructive pulmonary disease (COPD) in 2030 is thought to be the third cause of death worldwide after cardiovascular disease and malignancy (Perhimpunan Dokter Paru Indonesia, 2016). COPD is a common disease that is chronic in nature and so burdensome to health conditions that patients need to be involved in their complex self-care management (Disler, Gallagher and Davidson, 2012). COPD sufferers experience decreased pulmonary function, extra pulmonary disorders, symptoms of shortness of breath, loss of appetite, limited activity and all those prevent sufferers from carrying out their daily activities. This ill condition causes their dependence on people around them and affects their quality of life. To avoid recurrence of COPD, knowledge and comprehension of the disease and how to prevent the recurrence is a very important basis for those with COPD (Perhimpunan Dokter Paru Indonesia, 2016). Cooperation between patients and health workers is needed to increase patients' confidence in their self-care management (Disler *et al.,* 2012). One strategy of COPD management is through educational efforts to increase knowledge about self-care as a foundation for self-management of chronic diseases (Stoilkova, Janssen, and Wouters, 2013).

The Joint Commission (TJC) states that patient education standards require nurses and health teams to assess patients' learning needs and provide education (Potter and Perry, 2010). Health education is sometimes not optimal because of the inappropriate setting of health education goals, lack of involvement and empowerment of patients (Nurhidayah, 2010). Empowerment is as a paradigm that brings patients to achieve a greater independence and is capable of controlling their lives better (Marchinko, 2008). Due to the increasing prevalence of COPD and chronic disease conditions, COPD patients need encouragement and great attention so that they are able to manage their own conditions (Coulter *et al.,* 2015). Self-care is identified as an integral part of efforts to maintain and improve the health and well-being of those with chronic diseases, especially COPD (Delivery, 2010). The ability of COPD patients to deal with self-care in this study refers to Orem's nursing care theory (1971). Theory of self-care Dorothea Orem (1971) focuses on the patients' self-service that is needed as something learned aimed at helping patients care for themselves and managing their desired lives including health, development and prosperity (Potter and Perry, 2010). The study result by (Zwerink *et al.,* 2014) states that self-care is very important for the management of chronic diseases in dealing with symptoms, ways of treatment, adapting to lifestyle changes related to physical, psychological and social consequences. The research result by (Sharma, Kumar, and

Venkateshan, 2016) states that knowledge about self-care of patients with COPD is still low. This is in line with the statements of (Yu, Guo, and Zhang, 2014) that education should empower the patients and it is based on patient needs. (Journal and Sciences, 2017) studies that conventional treatments alone have no effect on the quality of life and smoking habits of patients. (College and Hospital, 2014) studies stated that the average number of COPD patients had received information from health workers about the disease but the results showed that their level of knowledge was still low on self-care. The results of (Press, 2016) states that improvement of the good health conditions of COPD patients can be achieved by increasing the empowerment and involvement of patients in self-care. Nevertheless, many COPD patients do not respond to self-care interventions. Only a small percentage of 15% of patients are active in self-care. The low understanding of the condition of the disease and the lack of empowerment of patients in self-management have a negative impact on the health progress of COPD patients (Disler *et al.,* 2015). The research by (Abedi, Salimi, Feizi, and Safari, 2018) states that the impact of not giving education has an effect on the disease to be uncontrolled, potential complications, decreased quality of patients' life and the high rate of re-hospitalization. This is in line with Osman's opinion (2010 in (Bourbeau *et al.,* 2003). 40% - 50% of COPD patients who returned from the hospital were re-hospitalized for further treatment and 17% of the patients who entered the emergency room had to undergo hospitalization due to the occurrence of acute exacerbation even though the drug therapy was optimal. Therefore, it is important to conduct further research on the effect of empowerment-based education on improving self-care of COPD patients.

MATERIALS AND METHODS

Study design: This was a quasi experiment with one group pre test and post test design that was giving treatment or intervention to the subject of the study then measuring and analyzing the effects of treatment (Polit and Beck, 2012). The study used this design to see the effect of the treatment assessed by comparing the value of the pre test and post test. The study was conducted at West Sumatera Pulmonary Hospital from 12 June – 16 July 2017.

Research subjects: Fourty eight respondents were selecting consecutive sampling. Inclusion criteria included:1) severe and very severe congestion patients on the basis of the Modified Medical Research Council (mMRC) questionnaire, 2) never received the same intervention from researchers or other health providers, (3) did not experience cognitive impairment,4) were capable of communicating with good verbal,5) were capable of reading and writing, 6) had good hearing and vision,7) were willing to be respondent and present in every education session. Exclusion criteria included: having severe exacerbation attack at study and the co morbid factors: cardiovascular disease, metabolic syndrome, osteoporosis, depression and lung cancer. The Calculation of the number of samples used a Power Analysis Table with power (1-β) = .80, effect size (γ) = .60 and α = .05 and the number of samples was 44 (Polit and Beck, 2010). To anticipate the possibility of drop-out, it was needed an additional number of samples of 10% that the samples overall were 48 respondents.

Intervention: The data collection procedure was carried out in two stages: the first preparation stage and the second implementation stage. The preparation stage consists of 2 stages: (1) preparing the research instrument, (2) the administrative procedure for the application of the data collection permit to the dean of the nursing faculty, the letter of ethical clearance and the data collection permit at the site of study. The next step identifies the samples and the patients who became the respondents were asked to sign an informed consent. The implementation stage consists of three stages, i.e. (1) the pretest stage of activities carried out by filling in the respondent's characteristic data and the self-care questionnaire. At this stage, the respondents were also given modules and daily activity sheets to be filled in for 2 weeks and evaluated for each educational meeting with the aim of reminding and motivating the respondents. Then they were collected in the last week of the study. The daily activity sheets filled in by the respondents who were as a manifestation of the independent self-care empowerment of respondents towards themselves. The intervention stage carried out the patient-empowerment-based-on education for 2 weeks, and 6 meeting times for 2 days.

The length of education in one session was 30 minutes and the respondents were divided into 4 groups (12 people in one group). The post-test stage was with activities of (1) did home visit, asking respondents to refill in self-care questionnaire, (2) reassessed respondents' knowledge and ability about deep breathing technique, pursed lips breathing and effective cough technique through prepared observation sheet, (3) interviewed 6 respondents who were considered as other respondent representatives based on the interview sheet, 4) conducted daily activity sheets that had been filled in for two weeks by the respondents. Some of the instruments used were hoped to improve the COPD patients' empowerment of self care. Those who intervened were the researchers themselves, The study was conducted at West Sumatera Pulmonary Hospital from 12 June – 16 July 2017.

Instrument

- The questionnaire consisting of two parts: the respondent's characteristic questionnaire and the COPD self-care questionnaire (COPDSC-C) used has been modified from the previous questionnaire developed by Jiang (1999). The questionnaire consisted of 32 items including medication adherence, breathing exercises, diet, physical activity, environmental control, smoking cessation and stress management. The questionnaire consisted of positive statements and 5 items of negative statements at 2, 3, 4, 13, and 27. The assessment used the 5-point Likert scale from 0 to 4 i.e. : 0 = never, 1 = rarely, 2 = sometimes, 3 = often, and 4 = always. Especially for Likert-scale interpretation, in answering negative statement items, the assessment becomed inversed i.e. 4 = never, 3 = rare, 2 = sometimes, 1 = often, and 0 = always. The maximum score is 128 with score interpretation ≥ 64 = adequate, score <64 = inadequate.
- The interview sheet is used to obtain additional information about the benefits of the educational program already given. Respondents taken to be interviewed were based on the achievement of the results of their self-care scores before and after the intervention with a maximum description of the respondent's score, an increase in the respondents' minimal self-care score and constant self-care scores.

- The observation sheet aims to see how far the patients' ability to perform deep breathing, pursed lips breathing and effective coughing techniques as parts of the respondent's daily activities and,
- The daily activity sheet developed from the COPD self-care component aims to get an overview and assess the daily activities conducted by respondents as a form of independent self-care empowerment of respondents towards themselves.

Validity and Reliability

The validity of COPD self-care questionnaire (COPDSC-C) to determine the Content Validity Index (CVI) was carried out by 3 experts with the assessment result that the questionnaire was feasible to use even though there were some parts of the questionnaire needed to be modified. After the CVI test, reliability testing was conducted at the Second-Level Putri Hijau Hospital Medan with the results of Cronbach Alpha 0.90. The number of samples taken in the reliability test of this study were 30 samples.

Ethical consideration

This study was paid attention to the basic principles of research ethics consisting of the principle: beneficience, respect for human dignity and justice (Polit and Beck, 2012). This study was on approval of the Faculty of Nursing Health Research Ethics Commission, University of North Sumatra, No. 1209 / VI / 2017.

Data analysis: In this study, the univariate data analysis describes the frequency distribution for respondent characteristic data and self-care variable whilst the bivariate analysis was used to see the relationship between two variables, first by performing the parametric statistic test by looking at skewness ratio and kurtosis. The kurtosis and skewness ratios for each statement item on the self-care questionnaire did not meet the assumptions of the parametric test with the results of the data not normally distributed. Therefore, the statistical tests were conducted with non-parametric tests namely the Wilcoxon Signed Rank Test.

RESULTS

According to the description of the research subject, the respondents' ages were more than half of the late elderly i.e. 56-65 years (52.10%). The sex in the majority was male (93.80%). The respondents' education was elementary school graduates (47.90%), and more than half of the respondents worked as farmers (64.60%). The marital status was married in the majority (81.20%). Duration of suffering COPD in the majority was <10 years (81.20%).

As for the history of smoking status, more than half had quitted (54.20%). The total smoking quantity was <1 pack per day (68.80%). The duration of smoking in the majority was ≥ 20 years (91.60%). The majority level of COPD was very severe (91.60%). Based on the research results in table 3 that is by using statistical Wilcoxon signed rank test, it was obtained that value p = 0.00 where p <0.05. The conclusion is that the patient-empowerment-based education has an effect on the improvement of the self-care of patients with chronic obstructive pulmonary disease (COPD).

Table 1. Frequency distribution and percentage characteristics of COPD Respondents

Characteristics	F	%
Age		
36 – 45 years (Late Adult)	3	6.20
46 – 55 years (Elderly)	8	16.70
56 – 65 years (Late Elderly)	25	52.10
> 65 years (Elderly)	12	25.00
Sex		
Male	45	93.80
Female	3	6.20
Education		
Elementary School	23	47.90
Junior High School	4	8.30
High School	17	35.40
University	4	8.30
Occupation		
Farmer	31	64.60
Private worker	14	29.20
Housewife	3	6.20
Marital Status		
Married	39	81.20
Widow/Widower	9	18.80
Years of Suffering from Disease		
< 10 years	39	81.20
> 10 years	9	18.80
Smoking Status		
Never smoke	1	2.10
Ex-smoke	26	54.20
Current smoke	20	41.70
Passive smoke	1	2.10
Smoking Quantities		
None	2	4.20
≥ 1 pack/day	13	27.10
< 1 pack/day	33	68.80
Smoking Duration		
None	2	4.20
≥ 20 years	44	91.60
< 20 years	2	4.20
COPD Scale of shortness of breath (mMRC)		
Severe	44	91.70
Very severe	4	8.30

Table 2. Description of respondents' self care before and after the intervention

Value of self-care	Before intervention		After intervention	
	F	%	f	%
Adequate	7	14.60	46	95.80
Inadequate	41	85.40	2	4.20

Table 3. Differences in respondents' self-care before and after the empowerment-based education intervention

Self-care	Mean Rank	*Value p*
Pre-test	0.00	0.00
Post-test	24.50	

DISCUSSION

Education is an interactive process that encourages learning process as an effort to add new knowledge, attitudes, and skills through strengthening certain practices and experiences (Smeltzer and Bare 2008). Health education provides not only information but also, the important thing, the creation of activities that can make a person independently make decisions as concerns health problems faced. This study has described a patient-empowerment-based education which shows the achievement of goals of health education that is the occurrence of full behavioral changes (knowledge, affective and psychomotor) as well as the reciprocal relationship between health professionals and patients in which patients can develop their skills, knowledge, and their own trust in determining the focus of their health care.

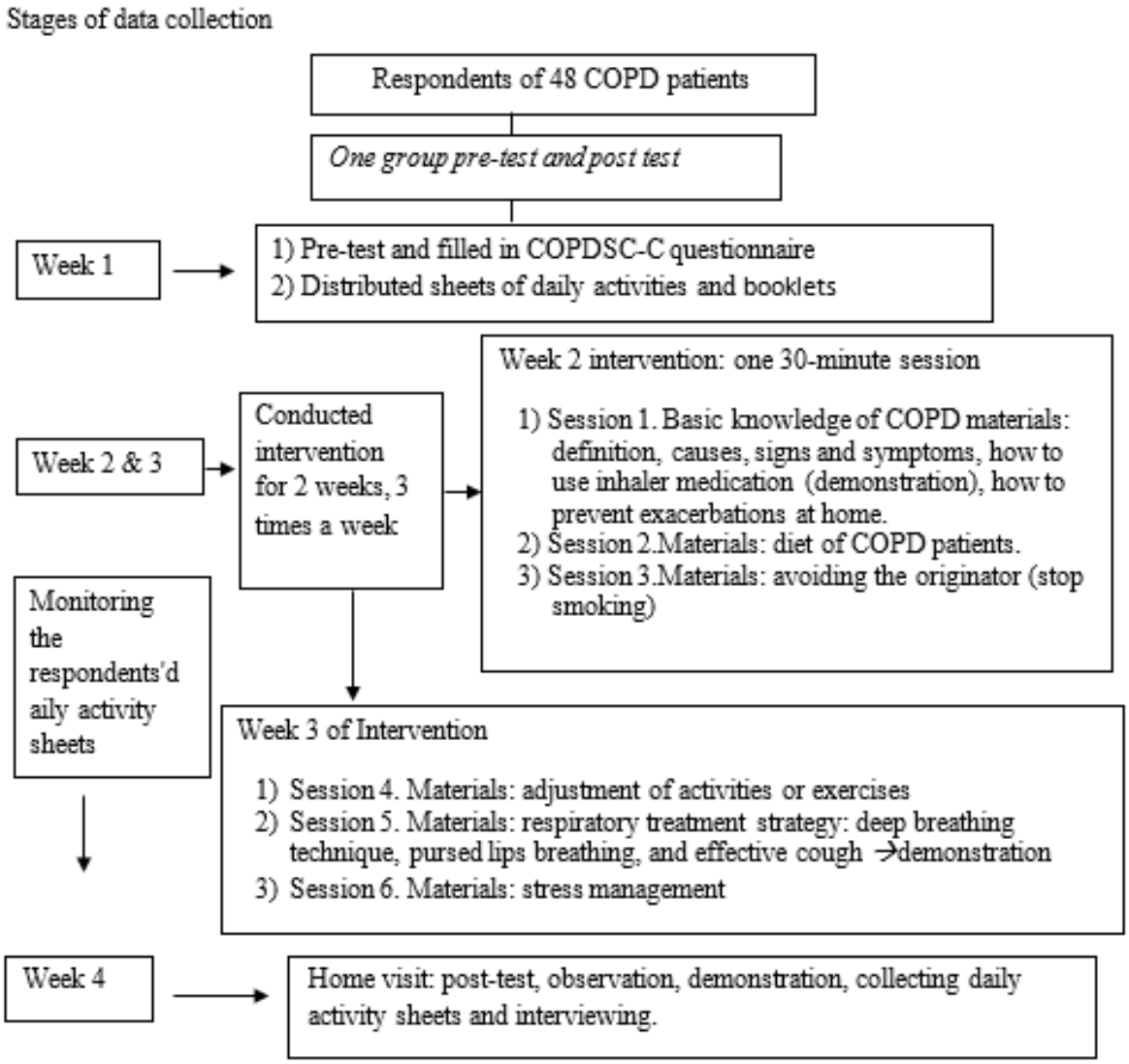

Figure 1. Stage of data collecting

This study is in line with other studies, suggesting that professional relationships between health workers and their clients should move to a more collaborative approach that recognizes the clients as the experts in their own condition as well as facilitates them to define the purpose of healthcare and life plans (Disler *et al.,* 2015). Self-management is an integral part of the modern patient-oriented biopsychosocial care. This is very important in improving the functional status and quality of life of the patients (Press, 2014). The strategy of empowerment programs is able to encourage the process of self-reflection and provide positive results for the improvement of better individual health. This can increase a greater sense of control, increased knowledge, awareness and changes in behavior (Woodall, South, and Warwick-booth, 2010). Self-care is the ability acquired to manage the life processes, to keep and maintain human health and development functions and to promote welfare (Parker and Smith, 2010). Self-care can be identified in the form of an individual's consistent actions (and appointed effectively), operability and adequacy (measured in terms of the relationship between the number and the type of actions done by a person and the actions obtained in assessing the needs of therapeutic self-care) (Fawcett, 2006).

In general, the COPD self-management program is a program that aims to teach the needed skills for long-term disease self-care and to guide the behavioral changes so as to help patients control their own condition and improve their empowerment (Bourbeau *et al.,* 2003).

Conclusion

There was an empowerment-based education effect on the increasing COPD patient self-care as illustrated by changes in respondents' behavior in maintaining and caring for themselves as a concrete manifestation that one needs to be responsible for one's own self-care. By so doing, the so-called self-empowerment is well accomplished. Nurses as facilitators especially carry out the maximum role as educators for the patients. They must demonstrate the attainment of health education objectives, i.e. the changes in the patients' behavior in full (knowledge, affective and psychomotor) so that the patients are capable of determining their own fate, sense of control, motivation, confidence in self-management. All of these can affect the stability of COPD disease suffered by the patients and can increase the degree of health status of patients in terms of daily self-care fulfillment.

Implications for Nursing Practice, Education and Future Studies: Implications of research results for nursing practice: become the basis for nurses about the importance of the relationship between self-empowerment between nurses and patients to improve the quality of nursing care services by increasing the role of nurses as patient educators, so that patients are able to self-manage COPD disease stability. Implications for nursing education: the need to provide empowerment-based education in patients with COPD and introduce COPD self-care assessment instruments (COPD-SC) as instruments used to assess self-care of COPD patients. Implications for further researchers: it is hoped that it can be used as a baseline to conduct further research that patient empowerment-based education can improve self care of patients with COPD disease.

Research Limitations: This study consisted of only one group without a control group and the limitations of this study were in sampling which did not control variables that could cause bias so that in the next study it is expected to be able to control variables. The sampling in this study did not control the variables. It is expected that the next research will control the variables. The researcher has tried to find the address of the original owner of the instrument to ask permission to use the research questionnaire but the researcher was unable to find the address or email the owner of the questionnaire but the researcher still listed the name of the original instrument owner.

REFERENCES

Abedi, H., Salimi, S. J., Feizi, A. and Safari, S. 2018. Effect of self-efficacy enhancement program on self-care behaviors in chronic obstructive pulmonary disease Background : Materials and Methods : Results : Conclusions : *18*(5), 421–424.

Bourbeau, J., Julien, M., Maltais, F., Rouleau, M., Beaupré, A., Bégin, R. and Collet, J. P. 2003. Reduction of hospital utilization in patients with chronic obstructive pulmonary disease: A disease-specific self-management intervention. *Archives of Internal Medicine*, *163* (5), 585–591.https://doi.org/10.1001/archinte.163.5.585

College, C. M. and Hospital, T. 2014. ORIGINAL RESEARCH ARTICLE KNOWLEDGE ON SELF CARE AMONG COPD PATIENTS ATTENDING AT. 7–10.

Coulter, A., Va, E., Eccles, A., Ryan, S., Shepperd, S. and Perera, R. 2015. *Personalised care planning for adults with chronic or long- term health conditions (Review)*. (3).

Delivery, S. 2010. Self-care and Case Management in Long-term Conditions : The Effective Management of Critical Interfaces.

Disler, R. T., Gallagher, R. D. and Davidson, P. M. 2012. International Journal of Nursing Studies Factors influencing self-management in chronic obstructive pulmonary disease : An integrative review §. *International Journal of Nursing Studies*, *49*(2), 230–242. https://doi.org/10.1016/j.ijnurstu.2011.11.005

Disler, R., Appleton, J., Smith, T., Hodson, M., Inglis, S., Donesky, D. and Davidson, P. M. 2015. Empowerment in people with COPD. *Patient Intelligence*, (January), 7. https://doi.org/10.2147/pi.s61195.

Fawcett, J. 2006. Contemporary nursing knowledge: analysis and evaluation of nursing models and theories (2rd ed.). Philadelphia: F.A. Davis.

Jiang, X. 1999. Family social support and self-care behaviors among chronic obstructive pulmonary disease patients. (Master of Nursing Science), Chiang Mai University, Chiang Mai.

Journal, S. and Sciences, C. 2017. Effects of COPD self-management education at a nurse-led primary health care clinic primary health care clinic. (February). https://doi.org/10.1111/j.1471-6712.2007.00510.x

Marchinko, S. 2008. The wellness planner : testing an intervention designed to increase empowerment and improve quality of life in individuals with mental illness. University of Manitoba Canada. Proquest Dissertation and Theses.

Nurhidayah, R., E. 2010. Ilmu perilaku dan pendidikan kesehatan untuk perawat (Behavioral science and health education for nurses*)*. Medan: USU Press.

Parker, M.E. and Smith, M.C. 2010. Nursing theories and nursing practicer (3rd ed.). Philadelphia: F.A. Davis.

Perhimpunan Dokter Paru Indonesia (PDPI). 2016. Penyakit Paru Obstruksi Kronik Diagnosis dan Penatalaksanaan. Jakarta: Universitas Indonesia (UI-Press).

Potter, P.A. and Perry, A.G. 2010. Fundamental Keperawatan (Nursing Fundamentals). Singapure: Salemba Medika.

Press, D. 2014. Self-management in patients with COPD : theoretical context , content , outcomes , and integration into clinical care. 907–917.

Press, D. 2016. Determinants of activation for self-management in patients with COPD. 1757–1766.

Sharma, M., Kumar, A. and Venkateshan, M. 2016. Effectiveness of self-instructional module on knowledge of self-care management of chronic obstructive pulmonary disease among patients with chronic obstructive pulmonary disease. *International Journal of Research in Medical Sciences*, *4*(5), 1604–1608. https://doi.org/ 10.18203/2320-6012.ijrms20161234.

Stoilkova, A., Janssen, D. J. A., and Wouters, E. F. M. (2013). ScienceDirect Educational programmes in COPD management interventions : A systematic review. *Respiratory Medicine*, *107* (11), 1637–1650. https://doi.org/10.1016/j.rmed.2013.08.006

Woodall, J., South, J. and Warwick-booth, L. 2010. Empowerment and health and wellbeing. Evidence review. *Centre for Health Promotion Research*, (September).

Yu, S., Guo, A. and Zhang, X. 2014) Science Direct Effects of self-management education on quality of life of patients with chronic obstructive pulmonary disease. *International Journal of Nursing Sciences*, *1*(1), 53–57. https://doi.org/ 10.1016/j.ijnss.2014.02.014

Zwerink, M., Pdlpm, V. D. V., Ga, Z., Em, M., J, V. D. P., Pa, F. and Effing, T. 2014. *Self management for patients with chronic obstructive pulmonary disease (Review)*. (3). https://doi.org/10.1002/14651858.CD002990.pub3.www.cochranelibrary.com.

****