

DAFTAR ISI

HALAMAN JUDUL	i
LEMBAR PERSETUJUAN.....	ii
PERNYATAN	iii
KATA PENGANTAR	iv
DAFTAR ISI.....	vi
DAFTAR GAMBAR	viii
DAFTAR TABEL	ix
DAFTAR LAMPIRAN	x
DAFTAR SINGKATAN	xi
INTISARI	xiii
<i>ABSTRACT</i>	xiv
I. PENDAHULUAN	1
A. Latar Belakang Penelitian	1
B. Rumusan Permasalahan	3
C. Pertanyaan Penelitian	3
D. Tujuan Penelitian	3
E. Manfaat Penelitian	4
F. Keaslian Penelitian	4
II. TINJAUAN PUSTAKA	8
A. Penyakit Paru Obstruktif Kronik.....	8
B. Penyakit Paru Obstruktif Kronik dan Gangguan Tidur	21
C. <i>Pursed-Lips Breathing</i>	24
D. Gangguan Tidur	29
E. <i>Pursed-Lips Breathing</i> dan Gangguan Tidur	32
F. Kerangka Teori	34
G. Kerangka Konsep Penelitian	35

H. Hipotesis	35
III. METODE PENELITIAN	36
A. Rancangan Penelitian	36
B. Tempat dan Waktu Penelitian	36
C. Populasi Penelitian	36
D. Subyek Penelitian.....	37
E. Besar Sampel.....	38
F. Variabel Penelitian	39
G. Definisi Operasional	39
H. Cara Penelitian	43
I. Analisis Statistik	45
J. Kelaikan Etika	46
K. Alur Penelitian	47
IV. Hasil dan Pembahasan.....	48
A. Hasil	48
B. Pembahasan	55
C. Keterbatasan Penelitian	59
V. Kesimpulan dan Saran	61
A. Kesimpulan	61
B. Saran	61
DAFTAR PUSTAKA	62

DAFTAR GAMBAR

Gambar 1.Patogenesis Gangguan Parudan Inflamasi Sistemik PPOK	12
Gambar 2.Patogenesis Gangguan Ekstraparupada PPOK	14
Gambar 3.Kerangka Teori	34
Gambar 4.Kerangka Konsep Penelitian	35
Gambar 5. Alur Penelitian	45
Gambar 6. Alur Subyek Penelitian	46

DAFTAR TABEL

Tabel 1. Penelitian Sebelumnya Tentang Rehabilitasi Pulmoner terhadap Kualitas Tidur	6
Tabel 2. Indikator Variabel untuk Mempertimbangkan Diagnosis PPOK	15
Tabel 3. Klasifikasi Derajat Keparahan Hambatan Aliran Udara PPOK	15
Tabel 4. Tatalaksana Farmakologis Pasien PPOK	18
Tabel 5. Durasi dan Dosis pada Penelitian Lain Tentang PLB	28
Tabel 6. Faktor yang Mempengaruhi Gangguan Tidur.....	29
Tabel 7. Karakteristik Dasar Subyek Penelitian	48
Tabel 8. Karakteristik Dasar Spirometri Setelah Perlakuan dan Beda Nilai Sebelum dan Sesudah Pelakuan (delta)	50
Tabel 9. Skor PSQI Sebelum, Sesudah dan Delta	51
Tabel 10. Perbedaan Skor PSQI per Komponen antara Kelompok PLB dan Kontrol	52

DAFTAR LAMPIRAN

Lampiran 1. *Informed Consent*

Lampiran 2. Kuesioner *Pittsburgh Sleep Quality Index*

Lampiran 3. Protokol Teknik

Lampiran 4. Lembar Catatan Harian

Lampiran 5. *Ethical clearance*

DAFTAR SINGKATAN

- PPOK : Penyakit Paru Obstruktif Kronik
GOLD : *Global Initiative for Chronic Obstructive Lung Disease*
PSQI : *Pittsburgh Sleep Quality Index*
PLB : *Pursed-Lips Breathing*
CAT : *COPD assessment test*
ISWT : *Incremental shuttle walk test*
HADS : *Hospital Anxiety and Depression Scale*
SGRQ : *St George's Respiratory Questionnaire*
6MWD : *Six Minute Walk Distance*
ADL : *Activity Daily Living*
SOBQ : *San Diego Shortness of Breath Questionnaire*
TGF- β : *Transforming Growth Factor- β*
CTGF : *Connective Tissue Growth Factor*
MMP : *Matrix Metalloproteinase*
IL : *Interleukin*
CRP : *C-Reactive Protein*
TNF- α : *Tumor Necrosis Factor- α*
PDPI : *Perhimpunan Dokter Paru Indonesia*
TIMPs : *Tissue Inhibitors of Metalloproteinase*
ROS : *Reactive Oxygen Species*
TBARS : *Thiobarbituric acid reactive substance*
NADPH : *Nicotinamide adenine dinucleotide phosphate*
TLR : *Toll-like receptor*
SLPI : *Secretory Leukocyte Protease Inhibitor*
FVC : *Forced Vital Capacity*
FEV1 : *Forced expiratory volume in 1 second*
SABA : *Short Acting Beta Agonist*
LAMA : *Long Acting Muscarinic Antagonist*
SAMA : *Short Acting Muscarinic Antagonist*

ABSTRACT

EFFECT OF PURSED-LIPS BREATHING ON THE IMPROVEMENT OF SLEEP QUALITY IN PATIENTS WITH STABLE CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Kurniasih¹, Noor Asyiqah Sofia², Ika Trisnawati³

¹ Resident of Internal Medicine

² Psychosomatic Sub Division of Internal Medicine

³ Pulmonology Sub Division of Internal Medicine

Faculty of Medicine Gadjah Mada University/ Dr. Sardjito Hospital
Yogyakarta

Background: COPD can caused a condition called chronic hypoxia that can lead to sleep quality problem. Pursed-lips breathing (PLB) is breathing retraining technique, part of pulmonary rehabilitation that can help the oxygenation flow in the body. Nowadays, there are several studies about the effect of pulmonary rehabilitation on the quality of life or sleep quality have been done in several country, but there are no studies about the effect of PLB on sleep quality.

Objective : The aim of this study was to analyze the effect of pulmonary rehabilitation with pursed-lips breathing technique on the improvement of sleep quality in patients with stable COPD.

Method : Method used in this research was randomized controlled trial design. We conducted open label in COPD outpatient with early symptom of depression by scoring them with Pittsburgh Sleep Quality Index (PSQI) questionnaire and then we randomized the result. The subjects was divided into two groups, the study group who went through PLB training and the control group. Standard therapy were maintained. After four weeks, the PSQI score was being evaluate.

Results : Out of total 43 subjects, 20 subjects were in the PLB group and 23 subjects were in the control group. The average age of subjects in the PLB group was $65,40 \pm 8,03$ years old and in the placebo group was $66,60 \pm 7,50$ years old. There was a bigger decrease of PSQI score in the PLB group $1,10 \pm 2,10$ ($p=0.03$) compare to the control group $0,87 \pm 1,32$ ($p=0.006$). But, there was no difference of the mean of delta between these two groups ($p = 0,295$).

Conclusion : Despite no significant difference in the sleep quality between two groups statistically, the improvement of the symptoms of sleep quality were much more to be found in the PLB group. As a result, pursed-lips breathing exercise may be considered as an adjunctive therapy for stable COPD patient that already receiving standard medical treatment

Keywords: stable COPD, pursed-lips breathing, sleep quality, Pittsburgh Sleep Quality Index, hypoxia