

Evaluation of the efficacy of modified home-based pulmonary rehabilitation

¹Dr. Krishnika Ravichandran, M.B.B.S, Final year post-graduate, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

²Dr. Meenakshi N., M.B.B.S, D.T.C.D, M.D, Professor and H.O.D, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

³Dr. Aruna Shanmuganathan, M.B.B.S, M.D, D.N.B, Professor, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

⁴Dr. Sridhar. R, M.B.B.S, D.T.R.D, M.D, Professor, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

⁵Dr. Nisha Ganga, M.B.B.S, D.T.C.D, Senior Resident, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

⁶Dr. Sahana, M.B.B.S, M.D, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

Corresponding Author: Dr. Meenakshi. N, M.B.B.S, D.T.C.D, M.D, Professor and H.O.D, Department of Respiratory Medicine, Chettinad Hospital and Research Institute, TamilNadu.

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Abstract

Introduction: Present study was undertaken as these patients may be exposed to covid19 in hospital settings; hence the need to continue PR at home.

Methods: Prospective observational study-50 patients enrolled into home based PR. Baseline subjective parameters (SGRQ, Borg, DASS, single breath count, snider match test, 3-minute walk test and flight of stairs) recorded/ reassessed monthly for 3 months using mobile phone.

Results: Among 50 patients, 6 dropped out – lack of accessibility to mobile phones; no direct supervision. All subjective parameters showed statistically significant improvement.

Conclusion: Modified home-based pulmonary rehabilitation can serve as an alternative to hospital-based PR in situations like COVID19 pandemic, where accessibility to hospital services is not possible.

Condensed abstract: Prospective interventional study conducted among 50 patients to evaluate baseline subjective parameters (SGRQ, Borg, DASS, single

breath count, snider match test, 3-minute walk test and flight of stairs) monthly for 3 months using mobile phone. All subjective parameters showed statistically significant improvement.

Keywords: 3-minute walk test, Pulmonary Rehabilitation, SGRQ, Snider match test.

Introduction

Pulmonary Rehabilitation (PR) is multidisciplinary non-pharmacological evidence-based tool to reduce symptoms and improve quality of life in patients with chronic obstructive pulmonary disease. (1) COVID19 has posed challenges in delivery of Hospital based PR. (2) Present study was undertaken as these patients may be exposed to covid19 in hospital settings; hence the need to continue PR at home. Present study was undertaken as these patients may be exposed to covid19 in hospital settings and community; hence the need to continue PR at home.

Pulmonary Rehabilitation is acknowledged as a core component of the integrated care of people with chronic respiratory diseases. (3)

Patients with chronic respiratory disease suffer from daily symptoms, muscle weakness, exercise intolerance, impaired mood status, poor quality of life and physical inactivity despite optimal medical treatment. (4)

Most of the new studies confirm the positive effects of pulmonary rehabilitation in such patients. (5)

Materials and method

Formal approval from an Ethics Committee was obtained. Prospective observational study-50 patients enrolled into home-based PR. Baseline subjective parameters (SGRQ, Borg, DASS, single breath count, snider match test, 3-minute walk test and flight of stairs) recorded/ reassessed monthly for 3 months using mobile phone.

Exclusion criteria

Patients with new/worsening of symptoms; COVID / suspect by definition

Inclusion criteria

Age group 18-80 years

Both males and females

Subjects with stable Chronic Respiratory diseases

Results

Among 50 patients,6 dropped out – lack of accessibility to mobile phones; no direct supervision.

Table 1

Subjective	Baseline	first month	Second month	Third month	p value
SGRQ	123.66+/- 158.75	81.26 +/- 121.35	54.25 +/- 82.55	24.88 +/- 50.06	0.0004 significant
Borg scale	1.6 +/- 1.08	0.92 +/- 0.91	0.67+/- 0.95	0.44+/- 0.78	0.0001 significant

Table 2:

6 DASS	Normal	Mild	Moderate
Baseline	34	3	8
1 month	33	5	7
2 month	35	8	2
3 month	40	5	0

Table 3:

Objective	Baseline	first month	Second month	Third month	P value
Single breath count	22.13 +/- 11.88	27.88 +/- 11.93	30.24 +/- 13.63	33.75 +/- 14.71	0.0001 significant

3-minute walk test	414.04 + 187.28	558.22 /- 232.41	620 +/- 255.26	751.11 +/- 294.55	0.0001 significant
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Table 4

Snider match blow test	Able to do	Not able to do
Baseline	34	11
1 month	41	4
2 month	44	1
3 month	44	1

Discussion

In spite of COVID-19 Pandemic, Modified Home-Based Pulmonary Rehabilitation was effective in improving quality of life and to reduce symptoms and depression scale. (6)

And also, Modified Home - Based Pulmonary Rehabilitation has shown significant improvement in subjective, objective parameters and exercise capacity as shown from:

- Sgrq
- Dass
- Borg
- Single breath count
- Snider match blow test
- 3-minute walk test and
- No. of stairs climbed.

Barriers in Modified Home-Based Pulmonary Rehabilitation include

- Restricted accessibility to smart/mobile phones
- Network issues
- Reliability of the results.

Conclusion

Modified home based pulmonary rehabilitation can serve as an alternative to hospital-based PR in situations like COVID19 pandemic.

Even in non-covid situations, this modified pulmonary rehabilitation can still be utilised in patients with limited access to health care services due to factors such as non-availability of man power, transport and other socio-economic factors.

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