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Correlative study of quality of life in COPD, Rheumatoid Arthritis and type – 2 Diabetes Mellitus in Trichy Population- Retrospective Study

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Abstract

Background: Chronic diseases like COPD compared with RA and DM, because COPD patients are characterised by air-flow obstruction, hyperinflation and reduced diffusion capacity, reduced peripheral and respiratory muscle forces and significant reduction in exercise capacity. Hence such severe chronic COPD patients were compared in RA and DM.

Method: Equal number of RA = 27, DM=27 and COPD=27 patients were compared with healthy (controlled) group=80 (eighty). Their Base-line features, physical activity, ED-SD Index after discharged from ICU/hospital since last one year. Mental status also compared in all three groups and controlled groups with percentage.

Results: Highest physical activity seen 19.2 (±1.9) in DM, low level 9.2 (±2.1) in COPD, ED-SD Index value was least 0.60 (±0.25) in COPD, highly index 0.70 (±0.25) in DM, Mobility problem, self care deficiency pain/discomfort were higher in COPD.

Conclusion: This pragmatic comparative study of chronic disease like COPD is compared with RA and DM and severity of disease observed in COPD which is significantly involved in respiratory distress create multiple problems like anxiety, physical exercise, discomfort need to be treated with more meticulously to avoid morbidity and mortality.

Key word: COPD, RA, DM, ED-SD Index, GHQ-12

Introduction

Chronic disease like, COPD, RA, and DM stroke are the diseases which cause morbidly especially higher age group and more severe in below poverty line (BPL) [(1)]. Because due to low income neither they get proper nutrition nor proper medication, hence they will get depression/anxiety, sleeping problems, pessimistic attitude. They have retarded physical activities. Majority of them are un-employed or retired lead the dependent life which create more aggressiveness of chronic diseases [(2)(3)]. It is also reported that, such patients attempts for suicide and commits suicide also. Hence their habit and habitat, mental status, quality of life [(4)] socio-economic are evaluated, because chronic diseases are treatable rather than curable. Hence they require personal care, proper medication; sympathy will make them lead hopeful life. Hence attempt was made to compare the COPD with RA, DM all three diseases being chronic and aggressive on negligence.

Material Method

85 patients aged between 35 to 65 regularly visiting chest Medicine departments of SRM Medical college Hospital and research centre Trichy Chennai High way, Irungular Village Tiruchirapalli – 621105, Tamil Nadu.

Inclusive: The patients having COPD, RA, DM are confirmed by investigations are selected for study. Exclusively COPD patients were compared with RA and DM (27 each X 3) i.e., 81 were compared with 80 Healthy groups (controlled).

Exclusion Criteria: Patients having both COPD and DM, DM with RA, were excluded from study.

Method: Equal Number of RA=27, DM=27, COPD=27 81 compared with 80 (Eighty) healthy (controlled) group (1) Physical activity sedentary, Moderate exercise, moderate regular exercise regular exercise, (2) Health related quality of life-very good. Good/ Neither good nor poor/poor/ very poor. The Euro Qol five dimensions questionnaires (EQ-5D) consists avidities, pain/discomfort and anxiety/depression. The index of ED-SD was computed according to Burstrom etal (1=full health, O=death). Psychological health and symptoms GHQ (General health Questionnaires) to study psychological disorders mainly anxiety / depression spectrum. O=equal or better than usual, 1-Worse than usual, psychological defined as present when the total score was 3 or higher. The following questions were asked during the past three months – anxiety and worry and depression. The subjects answering yes to the question has happened since last year were noted and compared in all three groups and controlled groups also.

The duration of study was from June-2015 to July-2016.

Statistical analysis: The values of various parameters in COPD, RA, DM and controlled group were noted. The statistical analysis was carried in SPSS software. The ratio of male and female was 2:1.

Observation and Results

Table-1: Base-line features of quality of chronic disease patients

1) Current smokers – 12 in COPD, 10 in RA, 8 in DM and 9 in Healthy group
2) Ex Smokers – 19 in COPD, 17 in RA, 10 in DM, 11 in controlled (out of 80)
3) Retired 19 in COPD, 17 in RA, 15 in DM and 24 in controlled (out of 80)
4) Working 8 in COPD, 10 in RA, 12 in DM and 56 in controlled (out of 80)
5) APL 13 in COPD, 12 in RA, 20 in DM and 48 in healthy (out of 80)
6) BPL 14 COPD, 15 RA, 7 DM, 32 (controlled out of 80)

Table-2: Comparison of physical activity in chronic disease patients

High activity 9.2 (±2.1) in COPD, 11.9 (±1.8) in RA, 19.2 (±1.9) in DM, 58.9 (±4.2) in controlled group

Low activity 15.8 (±3.8) in COPD, 8.1 (±2.3) in RA, 5.9 (±2.3) in DM, 12.3 (±1.2) in controlled group

Table-3: ED-5D index to measure the quality of life in chronic patients discharged after one year from ICU / hospital – ED 5D-Index value 0.60 (±0.25) in COPD patients, 0.58 (±0.25) in RA patients, 0.70 (±0.25) in DM patients, 0.90 (±10) in controlled group.

Discussion

The present correlative study of COPD with RA, DM and controlled group had Base-line features were in current smokers in 12 COPD, 10 in RA, 8 in DM and 9 in controlled group Ex-smokers in 20 COPD, 11 in Ra, 10 in DM and 11 in controlled. Retired patients in 19 COPD, 17 in RA, 15 in DM and 24 controlled. Working were 8-COPD, 10-RA, 12-DM and 56 in controlled group
APL (Above poverty line) 13 COPD, 12 RA, 20 DM and 48 Controlled
BPL (Below poverty line) 14 COPD, 15 RA, 7 DM and 32 Controlled (Table-1), The physical activity, High activity DM, 19.2 (±1.0) followed by 11.9 (±1.8) RA, least in COPD 9.2 (±2.1), Low activity was highest in COPD 15.8 (±3.8) least in DM 5.9 (±2.3) and 8.1 (±2.3) in RA (Table-2) ED-5D Index value was least in 0.60 (±0.23) in COPD, 0.58 (±0.25) in RA, 0.70 in DM and 0.90 (±10) in controlled groups. Highest problems in Motility in 46.2 (±1.30) in COPD while lease was in 34 (±0.50) and 3.5 (±0.10) in controlled group. Self care deficiency was highest in COPD and least in 6.2 (±0.8) in DM But pain and was highest in RA (94.2 ±2.9) followed by COPD 85.2 (±1.8), Anxiety / depression rate was highest 51.2 (±2.3) in COPD patients and least 33.8 (±0.36) in DM (Table)

The mental status of these chronic patients after discharge from ICU / hospital GHQ-12 score was highest 21.2 (± 1.2) in COPD patients least 12.3 (± 0.8) in CM and 6.4 (± 0.12) in controlled group. Anxiety or worry has highest 25.2 (± 1.8) in COPD patients least 13.2 (± 0.33) in DM and 5.2 (± 0.12) in controlled group. Fatigue rate was highest 50.2 (± 1.15) in RA, followed by 47.5 (± 1.3) in COPD, least 30.8 (± 0.52) in DM and 8.1 (± 0.11) in controlled group. Sleeping problem was highest 40.2 (± 1.3) in RA patients followed by 33.4 (± 1.20 in COPD patients least 23.3 (±0.88) in DM and 10.2 (± 0.22) in

controlled group. Rate of depression was highest 24.2 (± 1.3) in COPD patients followed by 20.4 (± 0.33) in RA, least in 11.3 (± 0.51) in DM and 3.9 (± 0.11) in controlled group. The pessimistic attitude was highest 17.4 (± 0.28) in COPD patients followed by 11.8 (± 0.58) in RA, least 7.9 (± 0.41) in DM and 2.2 (± 0.8) in controlled group (Table-4). These findings are more or less in agreement with previous studies [5][6][7].

The Euro Qol five dimension questionnaires (CD-5D) consists of the dimensions mobility, self care usual activities, pain / discomfort and anxiety or depression. GHQ General health information is self reported questionnaires designed to identity psychological disorders [8].

It was observed that, conditions of COPD patients are worse than RA and DM COPD is largely dependent on the age distribution, their smoking habits, middle-socio economic status. It is also reported that COPD observed in patients who never smoke or rare smokers [9], family history, type of occupation cause cough sputum production wheezing and dyspnea cause severe impact on mobility physical exercise leads to sedentary life and patients turns in depression and pessimistic attitude [10] as compare to RA and DM patients COPD patients use air-way medicines include beta-2-agonist and / or inhaled anti cholinergic and / or inhaled gluco-carticoids and / or expectorontia. The guide lines definition of COPD does not exclude asthma as a cause of chronic obstruction and the proportion of non-smokers COPD. The severe COPD reflects poor survival as it loads on cardio-vascular system; RA (Rheumatoid Arthritis) is a chronic inflammatory disease of unknown aetiology. Pain stiffness and fatigue reduction in body function is observed and controlled by medication which gives temporary relief. Diabetic mellitus being a hormonal impairment disease can be regulated by insulin and other hypoglycaemic drugs, regular check of glucose levels, drugs keep the patients healthy and active. In COPD patient dyspnea, respiratory distress keeps the patients anxious and pessimistic, sedentary hence clinical manifestation are found severe in COPD patients as compare to RA and DM.

Summary and Conclusion

Correlative study of quality of life in COPD, RA and DM patients in Trichy population observed that chronic disease patients often have low level of physical activity COPD and / or RA have higher negative impact on quality of life than DM patients. It is established fact that, such chronic diseases are treatable not curable. Hence regular medical follow-up is needed for to keep such patients under control / normalcy but it not possible for middle or low income family patients. Hence government hospital must have separate wings for such chronic patients so that personal attention and proper treatment can be given to these patients. But this study demands further genetic, nutritional, patho-physiological, immunological studies because exact pathogenesis of COPD, RA and DM is still-unclear.

Table – 1

Base line features of quality of chronic disease patients

Sl No	Base line features	COPD 27	RA 27	DM 27	Controlled group 80
1	Current smokers	12	10	8	9
2	Ex-smokers	20	11	10	11
3	Retired	19	17	15	24
4	Working	8	10	12	56
5	APL	13	12	20	48
6	BPL	14	15	7	32

APL = Above Poverty Line, NPL=Below Poverty Line

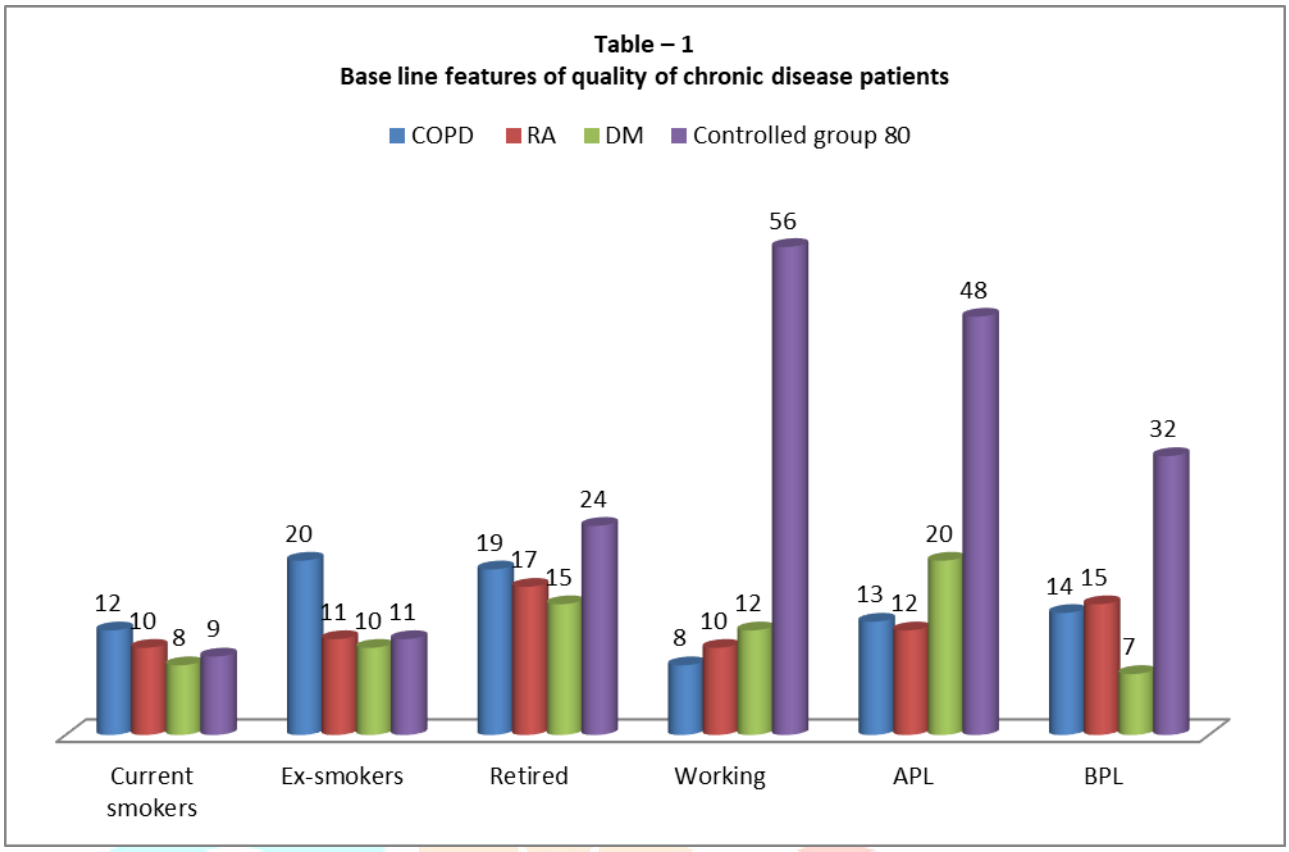


Table – 2

Comparison of physical activity

Sl No	Activity level	COPD 27 Mean value	RA 27 Mean value	DM 27 Mean value	Controlled group 80 Mean value
1	High activity	9.2 (±2.1)	11.9 (±1.8)	19.2 (±1.9)	58.9 (±4.2)
2	Low activity	15.8 (±3.8)	8.1 (±2.3)	5.9 (±2.3)	12.3 (±1.2)

High activity was observed in DM 19.2 (±1.0) and low activity in 15.8 (±3.8) in COPD patients.

Table – 2

Comparison of physical activity

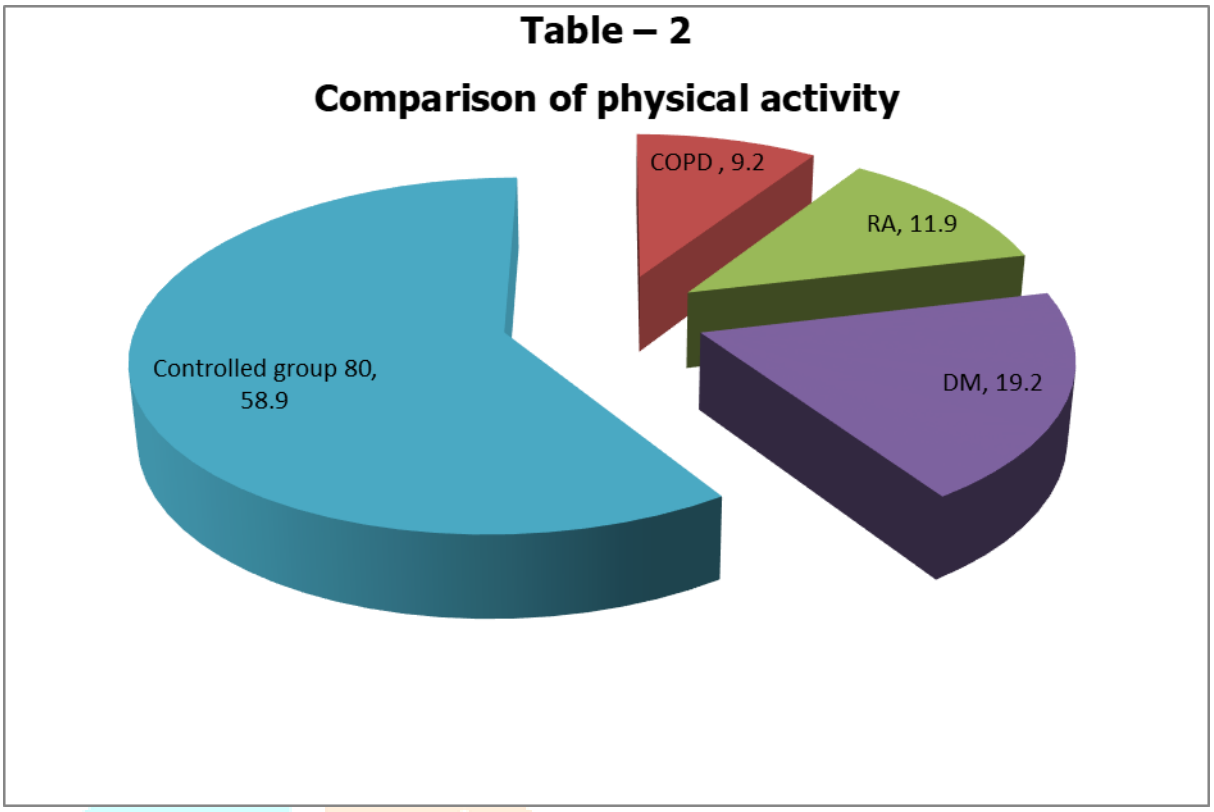


Table – 3

ED-5D Index to Measure quality of life after 1 year discharged from ICU / Hospital.

Particulars	COPD	RA	DM	Controlled group
ED-SD Index value	0.60 (±0.25)	0.58 (±0.25)	0.70 (±0.25)	0.90 (±10)
Mobility Problems	46.2 (±1.30)	53.2 (±1.35)	34 (±0.50)	3.5 (±0.10)
Self care deficiency	8.2 (±1.2)	11.2 (±0.98)	6.2 (±0.80)	0.3 (±0.04)
Pain/Discomfort rate	85.2 (±1.8)	94.2 (±2.9)	72.6 (±2.3)	34.2 (±0.8)
Anxiety / Depression rate	51.2 (±2.30	45.2 (±2.1)	33.8 (±0.30)	15.3 (±0.16)

ED-5D Index score was less in 0.60 (±0.25) COPD patients and high in 0.70 (±0.25) in DM patients self deficiently was highest in COPD, pain/discomfort highest in RA (94.2, ±2.9) Anxiety / depression highest in COPD (51.2, ± 2.3).

Table – 3
ED-5D Index to Measure quality of life after 1 year discharged from ICU / Hospital.

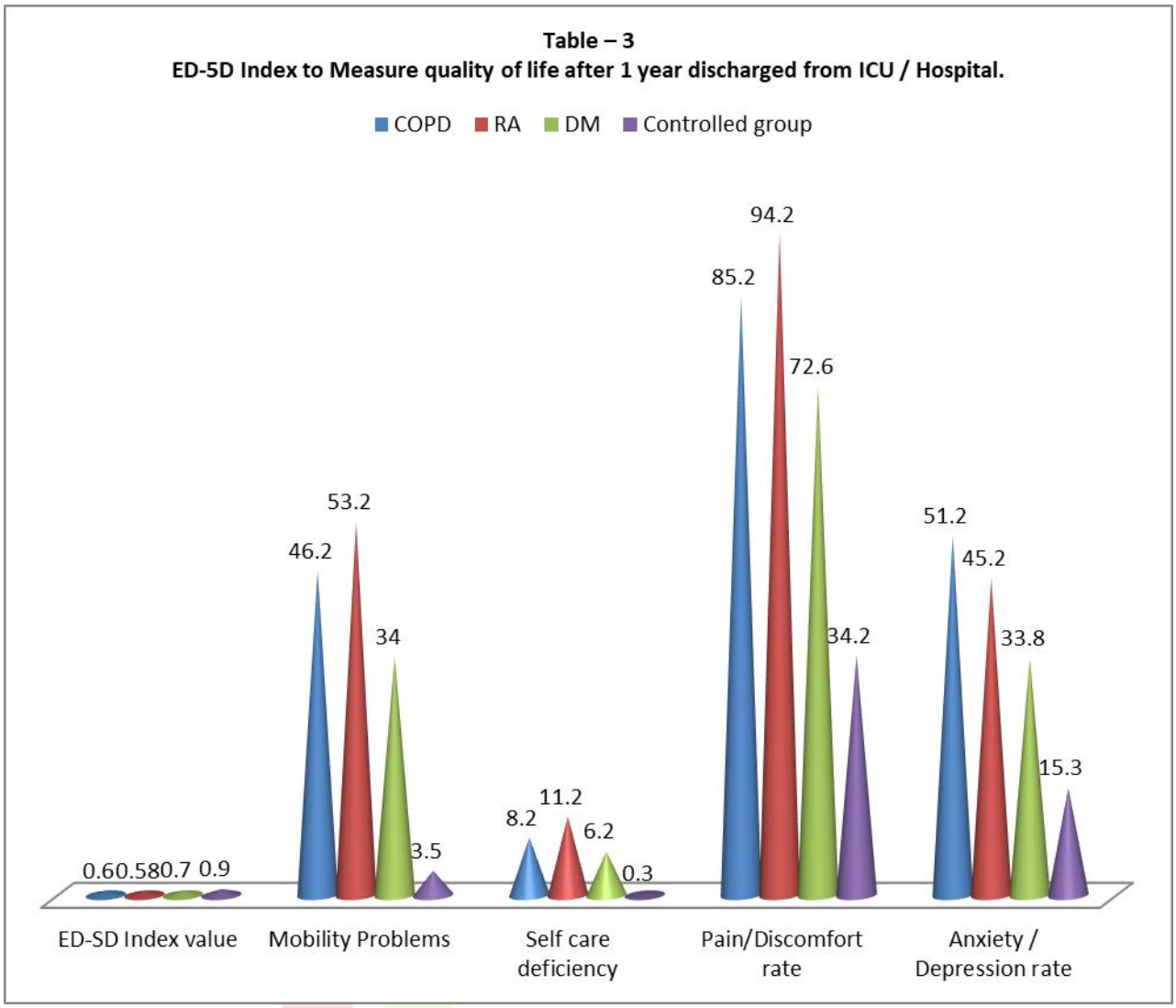


Table – 4

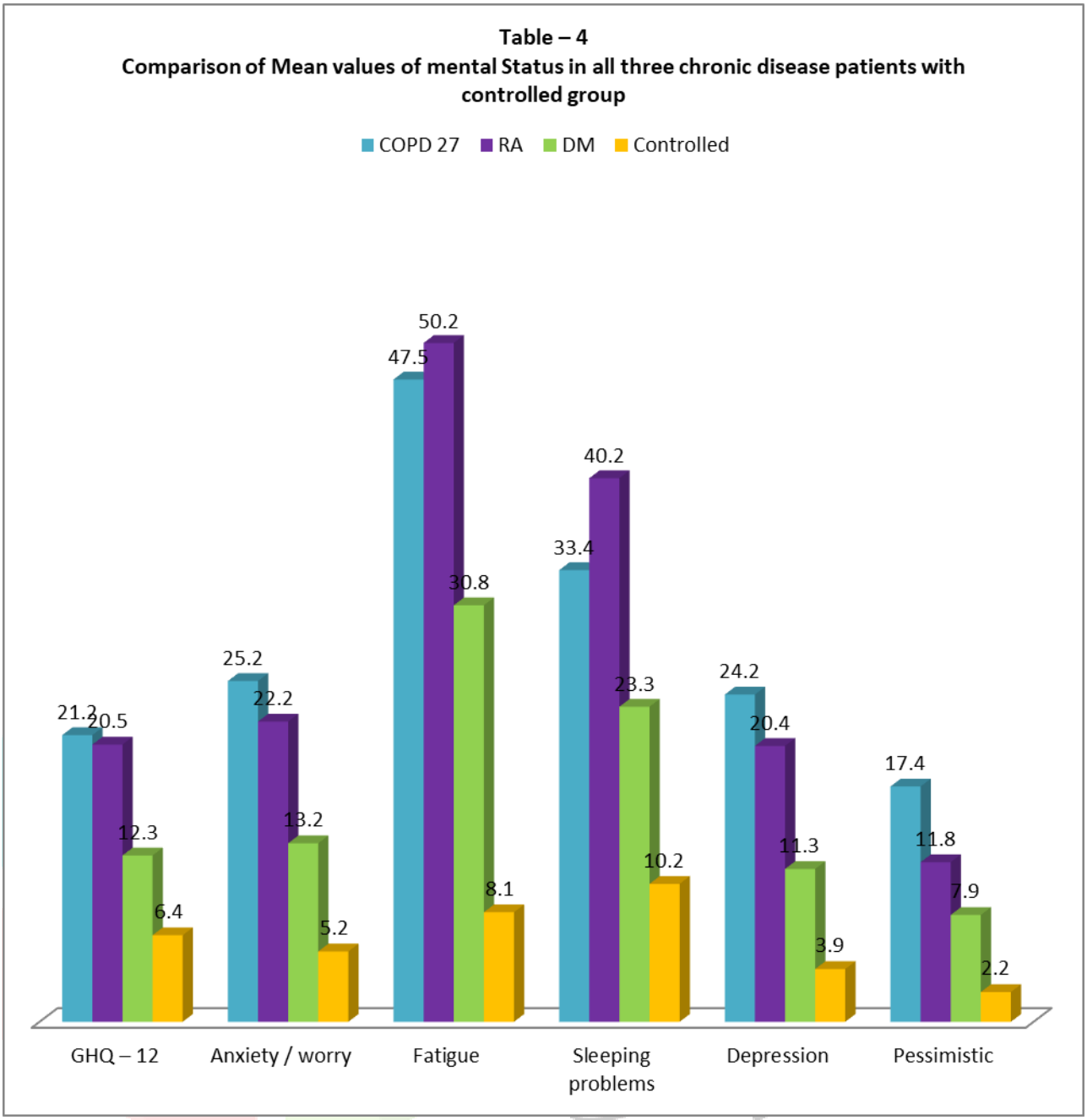
Comparison of Mean values of mental Status in all three chronic disease patients with controlled group

Particulars	COPD 27	RA 27	DM 27	Controlled 80
GHQ – 12	21.2 (±1.2)	20.5 (±0.5)	12.3 (±0.8)	6.4 (±0.12)
Anxiety / worry	25.2 (±1.8)	22.2 (±0.59)	13.2 (±0.33)	5.2 (±0.12)
Fatigue	47.5 (±1.3)	50.2 (±1.15)	30.8 (±0.52)	8.1 (±0.11
Sleeping problems	33.4 (±1.2)	40.2 (±1.3)	23.3 (±0.880	10.2 (±0.22)
Depression	24.2 (±1.3)	20.4 (±0.33)	11.3 (±0.51)	3.9 (±0.11)
Pessimistic	17.4 (±0.28)	11.8 (±0.58)	7.9 (±0.4)	2.2 (±0.8)

COPD has highest scores of GH-12 while DM has lowest scores

Fatigue 47.5 (± 1.3) and sleeping problems rate is higher in RA patients (40.2, ±1.3) but rate of depression is higher in COPD (24.2, ± 1.3)

Table – 4
Comparison of Mean values of mental Status in all three chronic disease patients with controlled group



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