

Sociodemographic Profile of Patients of Major Depressive Disorder Receiving Adjuvant Yogic Intervention in a Tertiary Care Hospital

Asha Rani¹, Dinesh Kataria², Ravinder Kr. Verma³, Bushra Zahoor⁴

How to cite this article:

Asha Rani, Dinesh Kataria, Ravinder Kr. Verma, *et al.*/Sociodemographic Profile of Patients of Major Depressive Disorder Receiving Adjuvant Yogic Intervention in a Tertiary Care Hospital/Indian J of Ancient & Yoga. 2023;16(1): 9-15.

Abstract

Depression is a common mental disorder affecting all age groups, gender and socioeconomic status in India and across the world. Globally, the burden of depression has been rising and major depressive disorder (DD) was the third leading cause of disability in 2015. Estimated global prevalence of depressive episode/DD varies from 3.2% to 4.7%. Yoga has become increasingly popular outside India during the past fifty years. According to the 2017 National Health Interview Survey (NHIS), yoga was used in the past 12 months by 14.3 % (35.2 millions) of US adults. Although reported prevalence rates vary by country as well as the reporting time frame and the criteria for duration or frequency of yoga practice, reports that compare use over time consistently find increases. Certain sociodemographic characteristics of the study population can be related to the response to yogic intervention which has been studied in the previous studies. And this article describes the sociodemographic profile of patients of Major depressive disorder receiving adjuvant yogic intervention in a tertiary care hospital.

Keywords: Yoga; Depression; Depressive disorder.

INTRODUCTION

The World Health Organisation definition of health, includes physical, social, spiritual and mental health, and not merely the absence of disease or infirmity.¹ The maxim, "there is no

health without mental health" underlines the fact that mental health is an integral and essential component of health.² Depression is a common mental disorder affecting all age groups, gender and socio-economic status in India and across the world. Globally, the burden of depression has been rising³ and major depressive disorder (DD) was the third leading cause of disability in 2015.⁴ Estimated global prevalence of depressive episode/DD varies from 3.2% to 4.7%^{4,5} by 2030, unipolar depression is predicted to be the second leading contributor to the global burden of disease.⁶ In India,¹ in 20 people suffer from depression. Yoga is a set of physical, mental and spiritual practices which arose in India thousands of years ago, has evolved over time, and is currently practiced in a range of forms around the world. Yoga traditionally consists of eight


Author Affiliation: ¹Research Scholar, ³Assistant Professor, Department of Yoga, Maharaja Agrasen Himalayan Garhwal University, Pauri, Garhwal 222001, Uttarakhand, India, ²Professor and Head, ⁴Senior Resident, Department of Psychiatry, Lady Hardinge Medical College, Delhi 110001, India.

Corresponding Author: Bushra Zahoor, Senior Resident, Department of Psychiatry, Lady Hardinge Medical College, Delhi 110001, India.

E-mail: bushra.zhr07@gmail.com

Received on: 03.01.2023

Accepted on: 28.01.2023

 This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0.

components, called the limbs of yoga: rules of conduct (yama) morality (niyama), physical postures (asanas), breath control (pranayama), withdrawal of the senses (pratyahara), concentration (dharana), meditation or withdrawal of the mind (dhyana) and oneness of meditative awareness (samadhi).⁴ Many current forms of yoga focus primarily on postures (asanas), usually with the addition of breath control (pranayama), and sometimes also incorporating elements of concentration or meditation, however this varies with different styles or schools of yoga that are practiced in different areas of the world and for different purposes.^{5,6}

Yoga has become increasingly popular outside India during the past fifty years. According to the 2017 National Health Interview Survey (NHIS), yoga was used in the past 12 months by 14.3% (35.2 millions) of US adults.⁷ Although reported prevalence rates vary by country as well as the reporting time frame and the criteria for duration or frequency of yoga practice, reports that compare use over time consistently find increases.⁸

There is a clear need for interventions which are efficacious in improving both physical activity and depressive symptoms^{9,10} and multicomponent lifestyle interventions incorporating a combination of physical activity, exercise and diet.^{11,12} Treatment guidelines for mental disorders from leading international organisations now recommend the integration of physical activity based interventions as part of routine psychiatric care.^{9,13-15} Despite these recommendations, translation of evidence into clinical practice and routine implementation of exercise interventions as part of standard care is limited.¹⁶

Certain socio-demographic characteristics of the study population can be related to the response to yogic intervention which has been studied in the previous studies.

METHODS

In this hospital based quasi-experimental study with control group, we analyzed data from the patients with depressive disorder, with different baseline HAMD scores, and were divided into intervention and control group. The Intervention group received Treatment as usual (Selective Serotonin Reuptake Inhibitor) + Yogic intervention. Control group received Treatment as usual (Selective Serotonin Reuptake Inhibitor). The sample in this study was Adult population (18 to 60 Years) diagnosed with depressive disorder

seeking treatment from Dept of Psychiatry Smt. Sucheta Kriplani Hospital, New Delhi.

All patients selected by purposive sampling fulfilling the following criteria were included i.e. Aged between 18 to 60 years, diagnosed as having major depressive disorder by psychiatrist (co-supervisor) as per diagnostic criteria listed in DSM-5, currently receiving treatment and planning to pursue follow up psychiatry care for next 6 month at study center, able to understand Hindi/English, medically stable to participate in yoga intervention as assessed by treating psychiatrist (co-supervisor) on medical examination. While patients meeting any of the following *criteria were excluded: Past history of psychiatric illness, reporting presence of suicidal thoughts/ideation or attempts within last 2 weeks, already on any alternative form of therapy besides standard pharmacotherapy and or psychotherapy for depression, regularly practicing yoga in past 8 weeks, having history suggestive of being diagnosed any medical condition requiring hospitalization currently or in recent past 6 weeks making participation in yoga based exercise program difficult.

ASSESSMENT

We designed a Semi-structured proforma especially designed for this study. It was used for collecting socio-demographic details, clinical details, examination findings, and other related information. The assessment of scales was routinely conducted on day 0 and day 90. Baseline assessment on day 0: HAM-D was applied, 2nd assessment on day 90: HAM-D was applied. The response was defined as a reduction $\geq 50\%$ in baseline depressive rating scores.

Instruments/Tools

Case Record Performa: Following information was collected: Socio-demographic variables (age, education, occupation, socioeconomic status, family type) 2. Mental Health Variables: Past psychiatric illness, family history of psychiatric illness, duration of psychiatric illness, duration of treatment.

For rating severity of depressive disorder: Hamilton Depression Rating Scale 17 item scale Hindi/ English was used at enrollment, fortnightly and at end of 12 weeks of intervention. For assessing yoga compliance and performance evaluation Participant activity diary log of sessions was done per week. Yoga performance assessment sought on semi-structured proforma on five parameters: (a)

Completes the entire yoga sequence, (b) remember and completes each step of the yoga practice, (c) coordinates breathing with yoga-asana, (d) breathing as instructed in Pranayama (e) relaxes during the yogic practices.

Yoga Therapy Module For Depression which included the following yogic intervention that is preparatory practices like Sukshma & Sthulavyayama, Suryanamaskar, shavasana, Standing posture (Ardha Chakrasana), sitting postures (Ushtrasana, Paschimottanasana), prone posture (Bhjungasana), Supine postures (Pavanmukthasana, Viparithakaramudra, Sethubandasana), Kriya Kapalabhati, Pranayama (Suryanulomaviloma, Ujjayi, Bhastrika), Pranava Japa (AUM chanting) A Session of 60 minutes, 2 days a week for 12 weeks was given by a trained yoga instructor (PhD research scholar).

RESULTS

The following result finding were found after analyzing the data:

- 66.3% and 80% of the participants were females in the intervention and control group respectively and 33.8% and 20% were males in these groups, the difference in gender distribution was not found to be statistically between both the groups.
- In the intervention group, 3.8% participants were divorced, 73.8% were married, 18.8% were unmarried and 3.8% were widowed and in the control group, 0% participants were divorced, 81.5% were married, 17.5% were unmarried and 1.3% were widowed. No significant statistical difference was found.
- 83.75% participants in the interventions group were Hindu and 16.25% were Muslim and 72.5% participants were Hindu in the control group and 27.25% were Muslims. No Statistical

significant difference was found between the two groups.

- 38.8% participants of the intervention group came from the rural background and 61.3% from the urban background. 58.8% participants of the control group came from the rural background and 41.3% from the urban background. Statistically significant difference was found between the two groups.
- Both in the intervention and the control group, the number of participants living in nuclear families was 3.8% while those living in joint families were 96.3%, giving a p value of 1.00, both groups having equally divided characteristics.
- 43.8% participants in the intervention group were employed as compared to 22.5% in the control group, 56.3% were unemployed in the intervention group as compared to 77.5% in the control group. Statistically significant difference was found between two groups.
- In the intervention group, 30% participants were graduates, 22.5% studied till high school, 16.3% were illiterate, 7.5% studies till intermediate, 12.5% passed middle school, 1.3% were postgraduates and 10% were primary school passouts. In the control group, 20.3% participants were graduates, 20.0% studied till high school, 13.8% were illiterate, 12.5% studies till intermediate, 12.5% passed middle school, 0% were postgraduates and 20% were primary school passouts. No statistically significant difference was found.
- Based on the modified Kuppusswamy scale, in the interventions group, 16.3% participants belonged to LMSES, 53.8% belonged to LSES, 25.0% belonged to MSES, 2.5% to UMSES and 2.5% to USES. In the control group, 17.5% participants belonged to LMSES, 56.3% belonged to LSES, 26.3% belonged to MSES, 0% to UMSES and USES.

Table 1: Sociodemographic profile of depressive patients

Gender	Intervention		Control		Chi-Square	df	P-value
	Freq.	%	Freq.	%			
Female	53	66.3	64	80	3.85	1	0.074
Male	27	33.8	16	20			
Marital Status	Freq.	%	Freq.	%	4.325	3	0.228
Divorced	3	3.8	0	0			
Married	59	73.8	65	81.5			
Unmarried	15	18.8	14	17.5			
Widow	3	3.8	1	1.3			

Religion	Freq.	%	Freq.	%			
Hindi	66	83.75	58	72.5			
Islam	13	16.25	22	27.5	3.830	2	0.147
Domicile	Freq.	%	Freq.	%			
Rural	31	38.8	47	58.8			
Urban	49	61.3	33	41.3	6.404	1	0.011*
Type of family	Freq.	%	Freq.	%			
Joint	3	3.8	3	3.8			
Nuclear	77	96.3	77	96.3	0.000	1	1.000
Occupation	Freq.	%	Freq.	%			
Employed	35	43.8	18	22.5			
Unemployed	45	56.3	62	77.5	8.154	1	0.004**
Educational Status	Freq.	%	Freq.	%			
Graduate	24	30.0	17	20.3			
High School	18	22.5	16	20.0			
Illiterate	13	16.3	11	13.8			
Intermediate	6	7.5	10	12.5	6.146	6	0.407
Middle School	10	12.5	10	12.5			
Post Graduate	1	1.3	0	0.0			
Primary School	8	10.0	16	20.0			
Kuppuswamy Class	Freq.	%	Freq.	%	-	-	-
LMSES	13	16.3	14	17.5			
LSES	43	53.8	45	56.3			
MSES	20	25.0	21	26.3	4.107		
UMSES	2	2.5	0	0.0			
USES	2	2.5	0	0.0			

DISCUSSION

Age:

The study sample consisted of patients ages ranged from 20 to 58 years and the mean age of patients in intervention group was 39 ± 10.210 while in control group was 35.138 ± 10.094 . The two groups were comparable statistically. Another study conducted by Bieber et al¹⁷ investigated the impact of a 3 months body oriented yoga in patients of major depressive disorder in Germany. In this study, the mean age of the patients was 49.75 ± 9.83 .

A meta-analysis of various yogic intervention studies showed that the age of participants ranged from 3 to 21 years-old. One study included individuals up to 21 years-old¹⁸, while three studies included individuals up to 20 years-old.¹⁸ As per randomised trial regarding the effectiveness of breathing based meditation intervention in patients of major depressive disorder by Sharma et al¹⁹, the

mean age group of the intervention group was 39.4 years while that of the control group was 34.8 years. The total number of subjects included in each study ranged from 10 to 211. Kinser et al. studied the potential long-term effects of a mind body intervention for women with major depressive disorder. In this study, the patients were followed up for a period of 52 weeks. The mean age of the yoga intervention group was 40.9 ± 15.4 . A possible reason for this age distribution in our study could be that this is the usual age of presentation of depressive disorders.

Gender

In the present study, 66.3% and 80% of the participants were females in the intervention and control group respectively and 33.8% and 20% were males in these groups, the difference in gender distribution was not found to be statistically significant between both the groups. This was probably because of the small sample size of the

study and most of the patients were from rural background of the community where treatment is generally not sought unless illness become severe. As per randomised trial regarding the effectiveness of breathing based meditation intervention in patients of major depressive disorder by Sharma et al.¹⁹, In both the groups,⁹ of the participants were female. Another study conducted by Bieber et al investigated the impact of a 3 month body oriented yoga in patients of major depressive disorder in Germany. Majority of the participants in both the groups were females. The 22 studies that reported number of participants of each sex showed an average of 41% male participants.¹⁸

Religion

In present study 83.75% participants in the interventions group were Hindu and 16.25% were Muslim and 72.5% participants were Hindu in the control group and 27.25% were Muslims. Statistical significant difference was found between the two groups. Possible reason for this could be most of the patients presenting to the OPD were Hindus. Another possible reason could be acceptance for Yogic intervention could be higher in Hindus as compared to other religions because of its philosophical roots.

Domicile

38.8% participants of the intervention group came from the rural background and 61.3% from the urban background. 58.8% participants of the control group came from the rural background and 41.3% from the urban background.

Representation of urban population was higher in Yoga group which was statistically significant ($p=0.011$). A possible reason could be that acceptance of yoga is higher in people coming from urban background.

Family setup

Both in the intervention and the control group, the number of participants living in nuclear families was 3.8% while those living in joint families were 96.3%, giving a p value of 1.00, both groups having equally divided characteristics. As a matter of fact, depression and its symptoms often are more pronounced among patients lacking adequate social support which might be an etiological factor of depression. However in our study most of the participants were from joint family setup.

Employment status

In present study 43.8% participants in the intervention group were employed as compared to

22.5% in the control group, 56.3% were unemployed in the intervention group as compared to 77.5% in the control group. Statistically significant difference was found between two groups. Based on a study by Kinser et al.²⁰, 48% of the participants had a regular employment while 52% were not working. However, in the intervention group, majority were employed.

Along with efficacy, a systemic review also demonstrated the feasibility of yoga for people with mental disorders. Attendance and dropout did not differ significantly from control groups, with some studies reporting better adherence to yoga than control condition.²¹⁻²³ A common barrier included 'difficulties making it to classes',²⁴ thus having yoga services available within inpatient and outpatient mental health facilitates may address this barrier and is likely to have positive effects on symptoms of depression, as well as increasing physical activity levels and promoting greater physical health.

Educational status

In the intervention group, 30% participants were graduates, 22.5% studied till high school, 16.3% were illiterate, 7.5% studied till intermediate, 12.5% passed middle school, 1.3% were postgraduates and 10% were primary school passouts. In the control group, 20.3% participants were graduates, 20.0% studied till high school, 13.8% were illiterate, 12.5% studied till intermediate, 12.5% passed middle school, 0% were postgraduates and 20% were primary school passouts. Statistical significant difference was found. Kinser et al. studied the potential long-term effects of a mind body intervention for women with major depressive disorder. Majority of the participants were white (non-Hispanic) in ethnicity. In educational status, majority (63%) had acquired a college degree. In another similar study by Sharma et al.¹⁹, majority of the participants in both the groups had acquired a college degree.

Marital Status

In the intervention group, 3.8% participants were divorced, 73.8% were married, 18.8% were unmarried and 3.8% were widowed and in the control group, 0% participants were divorced, 81.5% were married, 17.5% were unmarried and 1.3% were widowed. Significant statistical difference was found. Most of the participants were married as the age group represented in the study would mostly consist of married individuals.

Socio-economic status

Based on the modified Kuppaswamy scale,

in the interventions group, 16.3% participants belonged to LMSES, 53.8% belonged to LSES, 25.0% belonged to MSES, 2.5% to UMSES and 2.5% to USES. In the control group, 17.5% participants belonged to LMSES, 56.3% belonged to LSES, 26.3% belonged to MSES, 0% to UMSES and USES. This demographic profile is dependent on the location of our hospital and profile of patients attending our OPD. Our hospital is located in a urban area of Delhi and is attended in plenty by rural patients from lower/lower middle socio-economic groups. Despite the profile of patients being in accordance with the generalized profile of patients attending our facility, the fact that low socio-economic status is strongly associated with a higher prevalence of depression cannot be ruled out.

CONCLUSION

Our study concluded that sociodemographic characteristics like domicile and employment status had asignificant role when the intervention and control group were compared. However, more large scale studies would be required to support our findings.

REFERENCES

- Vigo D, Thornicroft G, Atun R. Estimating the true global burden of mental illness. *Lancet Psychiatry* 2016; 3:171-8.doi:10.1016/S2215-0366(15) 00505-2 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/26851330>.
- Greden JF. The burden of recurrent depression: causes, consequences, and future prospects. *J Clin Psychiatry*2001;62 (Suppl 22) :5-9. pmid:<http://www.ncbi.nlm.nih.gov/pubmed/11599650>.
- Murray CJ, Lopez AD, World Health Organization. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020: summary, 1996.
- S. Sarbacker, K. Kimple The eight limbs of yoga: A handbook for living yoga philosophy North Point Press (2015).
- E. DeMichelis A history of modern yoga Patanjali and western esotericism, Continuum, London (2005).
- M. Singleton Yoga body The origins of modern posture practice, Oxford University Press, Oxford (2010).
- T. Clarke, P. Barnes, L. Black, B. Stussman, R. Nahin Use of yoga, meditation, and chiropractors among U.S. adults aged 18 and over. NCHS data brief, no 325, National Center for Health Statistics, Hyattsville, MD (2018) November.
- D. Ding, E. Stamatakis Yoga practice in England 1997-2008: Prevalence, temporal trends, and correlates of participation *BMC Res Notes*, 7 (2014), p. 172.
- Stubbs B, Vancampfort D, Hallgren M, et al. EPA guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and position statement from the European Psychiatric Association (EPA), supported by the International Organization of Physical Therapists in Mental Health (IOPTMH). *Eur Psychiatry* 2018;54:124-44. doi:10.1016/j.eurpsy.2018.07.004 pmid:30257806.
- Firth J, Siddiqi N, Koyanagi A, et al. The Lancet psychiatry Commission: a blueprint for protecting physical health in people with mental illness. *Lancet Psychiatry* 2019;6:675-712. doi:10.1016/S2215-0366(19)30132-4 pmid:31324560.
- Teasdale SB, Ward PB, Rosenbaum S, et al. Solving a weighty problem: systematic review and meta-analysis of nutrition interventions in severe mental illness. *Br J Psychiatry* 2017; 210:110-8. doi:10.1192/bjp.bp.115.177139 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/27810893>.
- Schuch FB, Vancampfort D, Richards J, et al. Exercise as a treatment for depression: a meta-analysis adjusting for publication bias. *J Psychiatr Res* 2016;77:42-51. doi:10.1016/j.jpsy chires.2016.02.023 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/26978184>.
- National Mental Health Commission. Equally well consensus statement: improving the physical health and wellbeing of people living with mental illness in Australia. Sydney, Australia, 2016.
- Malhi GS, Bassett D, Boyce P, et al . Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *Aust N Z J Psychiatry* 2015;49:1087-206. doi:10.1177/0004867415617657 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/26643054>.
- Kennedy SH, Lam RW, McIntyre RS, et al. Canadian network for mood and anxiety treatments (CANMAT) 2016 clinical guidelines for the management of adults with major depressive disorder: section 3. pharmacological treatments. *Can J Psychiatry* 2016;61:540-60. doi:10.1177/0706743716659417 pmid:<http://www.ncbi.nlm.nih.gov/pubmed/27486148>.
- Schuch FB, Morres ID, Ekkekakis P, et al.

- Exercise works for depression: bridging the implementation gap and making exercise a core component of treatment. *Acta Neuropsychiatr* 2017;29:1246.doi:10.1017/neu.2017.1.pmid:http://www.ncbi.nlm.nih.gov/pubmed/28262.
17. Bieber M, Görgülü E, Schmidt D, Zabel K, Etyemez S, Friedrichs B, Prvulovic D, Reif A, Oertel V. Effects of body-oriented yoga: a RCT study for patients with major depressive disorder. *European archives of psychiatry and clinical neuroscience*. 2021 Oct;271(7):1217-29.
 18. James-Palmer A, Anderson EZ, Zucker L, Kofman Y, Daneault JF. Yoga as an intervention for the reduction of symptoms of anxiety and depression in children and adolescents: a systematic review. *Frontiers in pediatrics*. 2020 Mar 13;8:78.
 19. Sharma A, Barrett MS, Cucchiara AJ, Gooneratne NS, Thase ME. A breathing-based meditation intervention for patients with major depressive disorder following inadequate response to antidepressants: a randomized pilot study. *The Journal of clinical psychiatry*. 2017 Jan 25;78(1):493.
 20. Kinsler PA, Elswick RK, Kornstein S. Potential long-term effects of a mind-body intervention for women with major depressive disorder: sustained mental health improvements with a pilot yoga intervention. *Archives of psychiatric nursing*. 2014 Dec 1;28(6):377-83.
 21. Uebelacker LA, Tremont G, Gillette LT, Epstein-Lubow G, Strong DR, Abrantes AM, Tyrka AR, Tran T, Gaudiano BA, Miller IW. Adjunctive yoga v. health education for persistent major depression: a randomized controlled trial. *Psychological medicine*. 2017 Sep;47(12):2130-42.
 22. Varambally S, Gangadhar BN, Thirthalli J, Jagannathan A, Kumar S, Venkatasubramanian G, Muralidhar D, Subbakrishna DK, Nagendra HR. Therapeutic efficacy of add-on yogasana intervention in stabilized outpatient schizophrenia: Randomized controlled comparison with exercise and waitlist. *Indian Journal of Psychiatry*. 2012 Jul;54(3):227.
 23. Behere RV, Arasappa R, Jagannathan A, Varambally S, Venkatasubramanian G, Thirthalli J, Subbakrishna DK, Nagendra HR, Gangadhar BN. Effect of yoga therapy on facial emotion recognition deficits, symptoms and functioning in patients with schizophrenia. *Acta Psychiatrica Scandinavica*. 2011 Feb;123(2):147-53.
 24. Weinstock LM, Broughton MK, Tezanos KM, Tremont G, Gillette T, Uebelacker LA. Adjunctive yoga versus bibliotherapy for bipolar depression: a pilot randomized controlled trial. *Mental Health and Physical Activity*. 2016 Oct 1;11:67-73.

