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Research Article

The Efficacy of Yoga Practice during Pregnancy on Postnatal Depression & Quality of Life

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I N F O

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A B S T R A C T

Background: The postpartum period is a very special phase in the life of a woman and her newborn. There was high prevalence of depression during postnatal phase. Previous studies proposed that yoga practice has found health benefited effects in pregnancy & postnatal phase.

Aim: To study the effect of yoga practice during pregnancy on postnatal depression & quality of life

Methodology: A cross-section study on sixty-eight pregnant women with mean age ranging from 20 to 35 years with mean age of (29.66 ± 3.57) were enrolled in this study. They were divided into groups (yoga n=37) & control (31). Subjects with known case of Pregnancy complications, labor complications, psychiatric illness & medical illness were excluded from the study. The subjects of yoga group were attended four month of yoga practice consist of asana, pranayama, & relaxation techniques thrice in week for one hour per session per day during their pregnancy. And the subjects of control group followed their daily routine with walking for one hour. Quality of life & EPDS were assessed. The assessments were carried out after 10th week of postnatal period. Mann-Whitney test was used to assess between group differences.

Result: Quality of life measured by QOL more in yoga group: Physical Health (P<0.001), Psychological health (P<0.003), Social relationship (P<0.001), Environmental health (P<0.016) than control group. Postnatal depression as measured by EPDS less in yoga than control (P<0.001) with significant difference between groups. In yoga group, Out of 37 participants ten pregnant women (27 %) have score 10 & above (EPDS) score suggesting clinically depression, where as in control group, out of 31 participants fifteen pregnant (48%) women have score more than ten & above (EPDS).

Conclusion: Practice of yoga during pregnancy may help in reducing postnatal depression & improves quality of life in postnatal period.

Keywords: Yoga, Postnatal depression, postnatal care, QOL (Brief), EPDS

Introduction

The postnatal period is considered as vital phase for mother & child. Traditionally the postpartum period is supposed to end 6 weeks after birth. The third phase is the delayed postpartum period, which can last up to 6 months.[1] Many women perceived that they had a number of health problems after delivery, 76% reported at least one health problem after eight weeks post-delivery.[2] In developed countries, the risk factors for postnatal depression are past history of psychological disorder during pregnancy, low socioeconomic status, complicated delivery, and poor marital relationship.[3] Analyses show that there is a strong interaction among many risk factors, such as economic deprivation, marital violence, and the infant's gender.[4] Postpartum depression is also important due to its negative effects on social relationships and delay in the emotional contact between mother and newborn.[5]

Health problems commonly occurred after childbirth with some resolution over the 6 months postpartum. Health problems showing resolution between 8 and 24 weeks postpartum were exhaustion/extreme tiredness 49%, backache 45%, bowel problems 17%, lack of sleep/baby crying 15%, hemorrhoids 13%, perineal pain 4%, excessive/prolonged bleeding 2%, urinary incontinence 11%, mastitis 3%, and other urinary problems 3%.[6]

Several psychological problems found during postnatal period. The general symptoms of these women include depressed mood, weakness, disappointment, agitation, psychological distress, and sleep disorders.[7] The main predisposing factors for depression after delivery are history of mental disorders, depression during pregnancy, socio-economic insufficiency, and existence of other medical conditions.[8,9,10,11]

Postnatal depression has serious impact on mothers that manifests as lower quality of life and inability to care of themselves, their partner, and infants.[12,13] In another study, occurrence of the PPD was 15 % and mothers with PPD had lower quality of life scores based on World Health Organization Quality of Life–Brief (WHOQOL-BREF) scale.[14] Incidence of postnatal depression has been reported between 0 % to nearly 60 % in a review of studies from different countries.[15] Post-partum depression affects approximately 10-15% of all mothers in Western societies.[16,17] 15.8% in Arab women,[18] 16% in Zimbabwean women,[19] 34.7% in South African women,[20] 11.2% in Chinese women,[21] 7% in Japanese women.[22] In India postpartum depression reports of approximately 23% women in hospital-based[23] and vary from 11% to 26% in community-based studies.[24]

Earlier several studies have done using complementary & alternative therapy on the improvements in physical & psychological aspects of the postnatal mother. A RCT showed that an intervention involving foot reflexology in the postnatal period significantly improved the quality of sleep.[25] Physical activities benefited the physical and mental health of postpartum women and enhanced their quality of life.[26] Twelve weeks Home-based exercise is a feasible non-pharmacological intervention with the potential to alleviate postpartum depressive symptoms with eighty-eight postpartum depressed women.[27] leisure-time physical activity LTPA prior to, during, and after pregnancy may be important for reducing the risk of postnatal depression.[28] A 12-weeks randomized study showed that mothers in the pram-walking intervention group improved their fitness levels and reduced their level of depressive symptomatology for postnatal women.[29] Cognitive behavioral therapy is effective in Psychological outcomes during postnatal period.[30] Cognitive behavior intervention is effective in reducing PPD in at-risk mothers.[31] Prenatal exercise reduced the odds and severity of prenatal anxiety & postnatal depression.[32]

Previous studies proposed that, Yoga practice has found to have a positive effect on depression and anxiety symptoms in depressed pregnant women.

Earlier several studies have shown, practicing yoga during pregnancy & assessed its effect during pregnancy. Yoga reduces anxiety, depression and pregnancy related uncomfortable experiences.[33] Yoga group reported less depression, anxiety, anger, back and leg pain as compared to the social support group.[34] Antenatal yoga seems to be useful for reducing women's anxieties toward childbirth and preventing increases in depressive symptomatology.[35] In a study by Buttner et al., yoga group experienced significantly greater rate of improvement in depression, anxiety, and HRQOL compared to the control group.[36]

Few studies demonstrate the positive effect of yoga on postnatal period which previously practice yoga during pregnancy. Yoga has been practiced for 20 min sessions per week for 12 weeks in their second and third trimester of pregnancy reduces the perceived stress and postnatal depression in 20 post-natal females.[37] Lower depression level has been found in postnatal period in yoga group compared to control. prenatal Hatha yoga.[38] To best of our knowledge, no study has been done to see the quality of life in postnatal period practicing antenatal yoga practice, the aim of the present study is to see the effect of yoga on the incident of depression & influence on quality of life & depression of postnatal women, who were practice yoga during their pregnancy.

Methodology

A cross-sectional study with a total number (n=68) postnatal women were enrolled for the study. A sample size of 27/group was required for the inferences to be made at alpha 0.05 and a power of 0.8. The Previous study[34] reported an effect size of 0.50 on the effect of yoga on postnatal period was used to extrapolate the optimum sample size

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for this study using the G power software. A total of 68 were recruited into the study and there were 5 dropouts subsequently. Data available for the final analyses were for 37 and 31 in yoga and control groups respectively. The sample included postnatal women ranging in age from 20 to 35 years old (30.16±3.83 (yoga) & 29.06±3.19 (control). The groups did not differ on these variables The women were medically permitted for participation in the study by their obstetrician/gynecologist at the prenatal ultrasound clinics. Women with primi & multigravida, practiced yoga between 12th to 16th weeks of pregnancy, yoga practice from 12 weeks onwards, clinically healthy & good fluency in English & local language were included for the study. Pregnancy complication, labor complication, psychiatric illness, with any medical illness were excluded from the study. Participants were recruited from the Suhrudha Clinic, Bangalore. Informed signed consent was taken from all the participants at the commencement of the study.

Interventions

Both group started the practices 12th weeks onwards one hour sessions daily, alternate days for sixteen weeks (four months). A trained yoga instructor led group participants through a routine that was specifically designed for women in their second and third trimester of pregnancy. The Yoga group practiced modules incorporated the concepts and techniques for a holistic health management at physical, mental, emotional and intellectual levels was also used in our earlier study on yoga in pregnancy by Narendran et al.[39] The control group practiced walking.[40] The antenatal classes for both groups were aimed at educating the women (a) about the physical and psychological changes expected during pregnancy, (b) to incorporate the necessary changes in diet, life style including occupation, (c) avoid excess weight gain and stress to ensure better general health and physical stamina, (d) improve emotional stability for a positive quality of life and (e) prepare them for labor. Compliance: attendance at initial training was recorded; thereafter, monitoring was by phone and activity diaries.

Assessments

Assessments were done on both the group at the tenth weeks of postnatal period. Demographic Data, Quality of life (Brief) & Edinburg postnatal depression scale were assessed with both groups.

Demographic Data

A personal data sheet was developed for the present study, to elicit details of maternal characteristics which include (Age, height, Weight, occupation, Education, types of delivery, duration of delivery in terms of hours & post delivery pain recovery period) for the purpose of record and documentation.

Quality of Life (WHO-QOL)

WHQOL-BREF is a standardized comprehensive instrument for assessment of Quality of life. It consisted of 28 items. This was developed by the World Health Organization. It measures an individual's perception of quality of life for the four domains: (1) Physical health (2) psychological health (3) social relationships and (4) environmental health. In addition, it also includes two questions for 'overall quality of life' and 'general health facets. The domain scores are scaled in a positive direction (i.e., higher scores denotes higher quality of life. The range of scores if 4-20 for each domain. The internal consistency of WHQOL-BREF ranged from 0.66-0.87 (Chronbach's alpha co-efficient). The scale has been found to have good discriminate validity. It has good test retest reliability and is recommended for use in health surveys and to assess the efficacy of any intervention at suitable intervals to the need of the study.[41]

Edinburg Postnatal Depression Scale

Edinburgh Postnatal Depression Scale (EPDS) The EPDS[42] is a10-item questionnaire on the severity of symptoms experienced in the last 7 days. Each item on the EPDS has a range of 0-3. The EPDS has been well validated in both postpartum and prepartum populations.[42,43] The scale has high predictive validity, high sensitivity, and low false positive rates. An added benefit is that it covers the main symptoms of depression but excludes somatic symptoms such as fatigue and change in appetite, which could be present in normal pregnancy.[42,44] A standardized psychiatric interview for the measurement and diagnosis of common mental disorders in non-psychiatric settings. A cutoff score of 11 or 12 on the Edinburgh Postnatal Depression Scale was found to detect depression with a specificity of 85% and sensitivity of 92%.[45] Similar validity coefficients have been reported with the use of the Edinburgh Postnatal Depression Scale in other Asian cultures.[46]

Data analysis: Statistical analysis was done using SPSS, version 10.0 (SPSS, Chicago, IL, USA). The values were checked for normal distribution by the Shapiro-Wilk test. As the data were not normally distributed, analyses of the data were done using Mann-Whitney test for between groups comparison.

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Results

Demographic Details of the Participants

Table 1.Maternal Characteristics

Variables		Yoga (N= 37)	Control (N=31)
		Mean ± S.D	Mean ± S.D
Age in years		30.16±3.83	29.06±3.19
Height (Inches)		5.20±0.25	5.24±0.18
Weight (K.G)		63.64±6.25	63.10±6.73
Occupation	Working	12	7
	House wife	25	24

Legend: Non-significant (p>0.05) difference between groups in all variables Mann-Whitney Test & Chi-square Test.

Table 2.Participants Delivery details

Variables		Yoga (N= 37)	Control (N=31)	Sig- P values, Between Gps (Chi-square Test)
*Duration of labor	1hr-5hr	9 (24.32 %)	12 (38.70%)	*p>0.001
	6hr-10hr	19 (51.35 %)	14 (45.16%)	
	11hr-15hr	9 (24.32 %)	5 (16.12 %)	
*Post Delivery Pain recovery	8 days	13 (35.13 %)	7(22.58 %)	*p>0.017
	15 days	9 (24.32 %)	13 (41.93 %)	
	30 days	15 (40.54 %)	11 (35.48 %)	
Types of Delivery	Normal	29 (78.37%)	26 (83.87 %)	p>0.662
	Cesarean	8 (21.62 %)	5(16.12 %)	

Legend: There is a significant difference (*Chi-square Test) in Duration of labor (p>0.001) & post-delivery pain recovery (p>0.017) in between groups.

Quality of Life (QOL- Brief)

Quality of life measured by QOL more in yoga group: Physical Health (P<0.001), Psychological health (P<0.003), Social relationship (P<0.001), Environmental health (P<0.016) than control group.

Edinburg Postnetal Depression Scale (EPDS)

Postnatal depression as measured by EPDS less in yoga (P<0.001) than control group.

Cases of Clinical Depression Participants in Both Groups

In yoga group, Out of 37 participants ten pregnant (27%) women have score 10 & above (EPDS) score suggesting clinically depression, where as in control group, out of 31 participants, fifteen pregnant women (48%) have score more than ten & above (EPDS).

Table 3.Changes in QOL after Intervention in both Groups

Variables QOL (Brief)	Yoga N=37	Control N=31	% changes	Sig- P values, Between Gps (Mann-whiney)
Physical Health (Phy H)	26.54±2.85	23.77±3.17	10.43 %	0.001
Psychological Health (Psy H)	22.16±2.10	20.26±2.56	8.57 %	0.003
Social Relation (SR)	12.46±1.45	10.68±1.66	14.28 %	0.001
Environmental (EN)	31.35±5.05	28.13±5.73	10.27 %	0.016
Mann Whitney U test (Between groups). *P<0.001				

Legend: There was significant improvements in quality of life in yoga group compared to control group.

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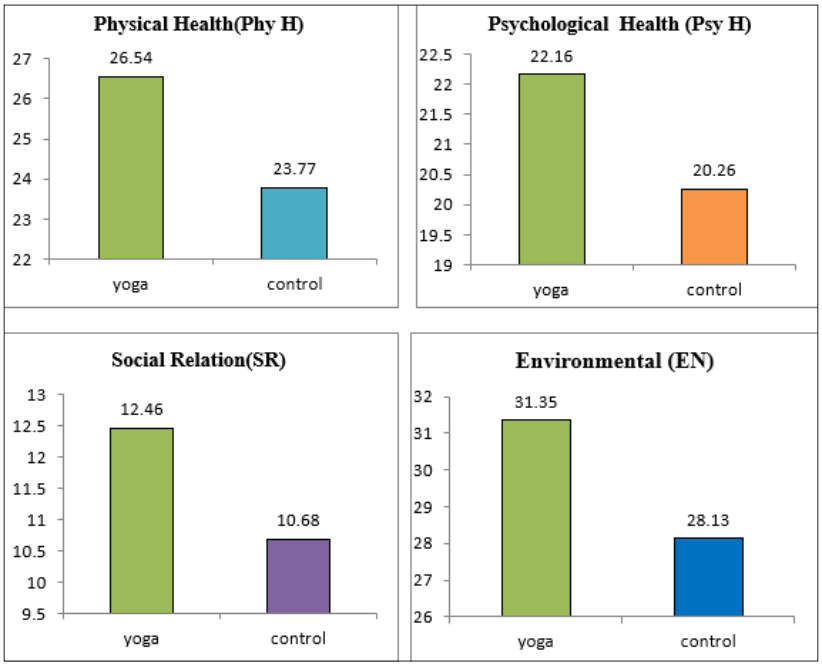
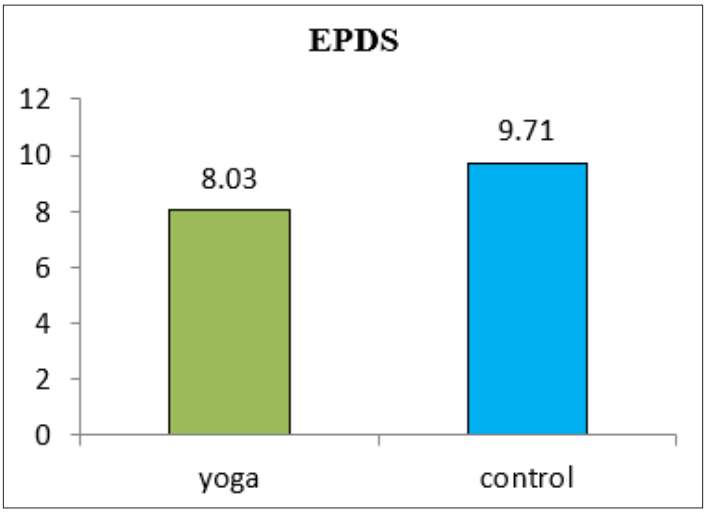


Graph 1.Quality of Life (QOL)

Table 4.Changes in EPDS after Intervention in Both Groups

Variables	Yoga N=37	Control N=31	% changes	Sig- P values Between Gps (Mann-whiney)
EPDS	8.03±1.76	9.71±1.70	20.92 %	0.001
Mann Whitney U test (Between groups) * P<0.001				

Legend: There was significant reduction in depression in yoga group compared to control group.



Graph 2.Edinburg Postnetal Depression Scale (EPDS)

Table 5.Changes in EPDS after Intervention in Both Groups

Variables	Yoga: N=37	% change	Control: N=31	% change
10 & above in EPDS Score	37(10)	27%	31(15)	48%

Legend: No of clinical depression case were less in yoga group than control group.

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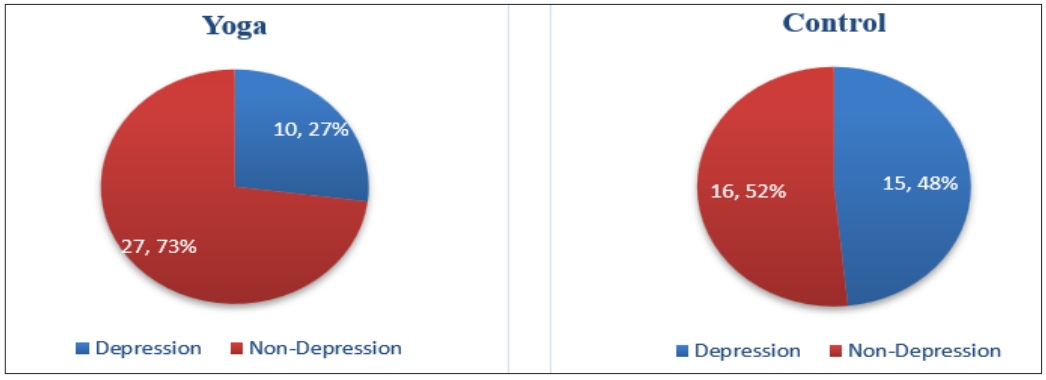

Graph 3.Cases Of Clinical Depression Participants In Both Groups.

Discussion

The present findings reveal that, Practice of yoga during pregnancy reduced postnatal depression & improves quality of life in tenth weeks of postnatal period.

Comparison with Earlier Study

A previous review study has shown the Incidence of postnatal depression generally has been reported between 0 % to nearly 60 % in different countries.[15] In present study result shown that, in yoga group, out of 37 participants ten pregnant (27%) women have score 10 & above (EPDS) score suggesting clinically depression, where as in control group, out of 31 participants, fifteen pregnant women (48%) have score more than ten & above (EPDS).

An earlier study found to be a similar effect. Tai chi/yoga group had participated 20-min group session per week for 12 weeks at 22 weeks' gestation period showed the lower depression (CES-D) scores, lower negative affect and somatic/vegetative symptoms, lower anxiety (STAI) scores and lower sleep disturbances scores.[34] The result indicated that 12 weeks of yoga programme had significantly reduced (27.46 %) depression on postnatal period. This result supports present findings.

Yoga as an intervention reduces the perceived stress (26.29 %) and postnatal depression (52.51 %) levels to certain extent in 20 post-natal females.[37] This result is similar to few earlier studies. Present result demonstrated, that Postnatal depression as measured by EPDS is less in yoga (20.92 % P<0.001) than control group.

An earlier study has shown that, Integrated yoga is an effective in improving physical health (8.52 %) & Psychological health (10.13 %) on the quality of life measure by QOL-100 in pregnant women and enhancing certain aspects of their interpersonal relationships[47] during pregnancy. In Present study, Quality of life measured by QOL more in yoga group: Physical Health (10.43 %), Psychological health (8.57 %), Social relationship (14.28 %), Environmental health (10.27 %) than control group. Earlier study measures the QOL-100 during pregnancy but the present study measures the quality of life during postnatal period. This results supports present finding. The yoga group experienced significantly greater rate of improvement in depression, anxiety, and HRQOL, relative to the control group with moderate to large effects. 78% of women in the yoga group experienced clinically significant change.[5]

Mechanism

Allostatic load (AL) index has been positively correlated with cumulative chronic stress (physical and psychosocial stressors) and with a high risk to develop pathological conditions (e.g., metabolic syndrome, cardiovascular pathology, inflammatory disorders) and the so-called stress-related psychiatric disorders, including anxiety and depressive disorders.

Chronic stress has negative effects on brain neuroplasticity, especially on hippocampal neurogenesis and these effects may be reversed by antidepressant treatments. Several evidences indicate that non-pharmacological interventions based on physical activity and yoga practice may add synergizing benefits to classical treatments (antidepressant and benzodiazepines) for depression and anxiety, reducing the negative effects of chronic stress.

The mechanism of performing regular exercises in Yoga results in long-term sympathetic effects, changes hippocampal function, and prevents depression.[48] A meta-analysis of randomized controlled trials showed that Yoga practice may reduce cortisol, autonomic response (changes in heart rate and systolic blood pressure), cytokines, and lipid levels and, as a result, reduce stress symptoms.[48]

The strength of the study was, the postnatal women were more relaxed and their depression levels had been reduced considerably. Quality of life has been improved significantly in yoga group compared to control. The yoga classes had given them a feeling of well-being with an increased positive outlook. They could be able to sustain more emotional stability in managing their postnatal recovery period, as well as their profession, household and social activities.

The limitations of this study were, it is not RCT trial, sample size was small, classes were not regularly practiced & longer duration of yoga practice needed. This yoga module can be

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helpful for all the postnatal women. it can be practiced in clinical settings. This yoga intervention can be an effective training programme for women's in postnatal period.

Conclusion

Practice of yoga during pregnancy may help in reducing postnatal depression & improves quality of life in postnatal period.

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Conflict of Interest: None

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