

Effect of Suryanamaskar on Stress in Delayed-Postpartum Indian Women – A Pilot Study

Devanshi Gala¹ and J. K. Savalia²

¹Research Scholar, Department of Ashtanga Yoga, Lakulish Yoga University, India

²Professor, Department of Ashtanga Yoga, Lakulish Yoga University, India

Abstract. Motherhood, though emotionally fulfilling, is physically and mentally challenging, that changes the women's overall life. Hence, the perinatal period, in general as a whole, can be considered an extremely vulnerable period. Which includes layers of stressors like the skin of an onion. The present study was designed to assess the effect of the Suryanamaskar on stress in delayed-postpartum in Indian women. Method: 39 participants, enrolled using convenient sampling, were divided into 3 groups of 13 participants each. Group 1 was given a fast-paced Suryanamaskar module; Group 2 was given a slow-paced Suryanamaskar module; and Group 3 was given no intervention. Maternal Perceived Stress Scale (MPSS) questionnaire was used for data collection and paired t-test was used for analysis. Results: A very significant decrease was seen in the levels of stress in delayed-postpartum women of Group 1 ($p < 0.05$), and Group 2 ($p < 0.01$), and Groups 1 and 2 combined ($p < 0.01$) after practicing the Suryanamaskar-based intervention; while no significant change was recorded in women of Group 3 (control group). Conclusion: Regular practice of the Suryanamaskar, even if has been practiced for a short duration, helps to reduce stress levels in delayed-postpartum women.

Keywords. Stress, Suryanamaskar, Yoga, Delayed-Postpartum

*CORRESPONDENCE

Address Department of
Ashtanga Yoga, Lakulish
Yoga University, India

Email devanshi18@gmail.com

PUBLISHED BY

Dev Sanskriti Vishwavidyalaya
Gayatrikunj-Shantikunj
Haridwar, India

OPEN ACCESS

Copyright (c) 2022 GALA
and SAVALIA

Licensed under a Creative
Commons Attribution 4.0
International License



Introduction

Childbirth, a marvel of bringing a newborn onto this earth, is not just about the neonate, but also about the woman as she takes rebirth as a mother. Motherhood is as emotionally fulfilling as it is physically and mentally challenging, resulting in complete change in women's life. Though a phase of nourishment, enrichment, and amelioration, the postpartum period is also marked by dramatic shifts at corporal, mental and social levels in a woman's life including but not limited to hormonal swings and nerve-racking parenting tasks that can cause women to experience stress and fatigue [3]. The physiological changes that can be seen during pregnancy include modifications in neuroendocrine hormonal shifts, inflammatory, and autonomic nervous system activation, which has the potential to aggravate the stress response and intensify the peril of perinatal physiological and psychological difficulties of the women [6]. Hence, as a distinct susceptible group, pregnant and postpartum women become high-end prey to stress and other such mental illness [4].

Stress can be understood as the responses one gives at the mental, emotional, and physiological levels to the demands of life [5]. However, how stress is experienced and understood by an individual depends on their preconceived perceptions, existing coping mechanisms, and their previous interactions with the environment rather than the stress-causing stimuli itself [6]. Postpartum maternal stress is usually connected with poor health outcomes and the advancement of psychological problems. The factors impacting stress levels during this period include any form of pre-existing stress, mental health status at the baseline, mother or neonate's health status, and demographic characteristics [6]. When uncontrollable, stress augments the risk of attracting maternal depression and anxiety, which may result in undesirable maternal and child outcomes [8]. Thus, making stress, the stimulus of a persistent and recurrent incident of depression [9]; which if not alleviated in time, may strengthen the hold of postpartum depression [4]. Scientific studies reveals that there was rise in postpartum stress during the Covid-19 pandemic [6] and

there was occurrence of postpartum depression symptoms, anxiety and perceived stress [10], [4]. In North America also an alarming pervasiveness of 34.8% of high-level anxiety and a 43.3% prevalence of high-level stress has been observed during the similar studies [11]. Therefore, it is pivotal to recognize the origin of postpartum maternal stress at the earliest and address it in time to diminish the possibility of postpartum depression [4].

Research over the years has proven and strengthened the position that yoga practices hold in establishing homeostasis by alleviating stress and encouraging a healthy lifestyle [12]. Yoga is considered one of the most inexpensive, non-invasive, and non-pharmacological approaches to managing stress and ameliorating wellbeing [7]. The Surya-Namaskar, is an ancient yogic practice involving 12 steps where yoga asana are performed in a particular arrangement following a precise breathing order, is one such, most popular yogic practices. Employing deep relaxation, these yogic practices can eradicate every form of tension, perceived stress, and all physiological indicators of the stressor [12]. It has been reported that yoga practice results in fall of self-reported levels of stress and anxiety in adults [14]. Even though literature has been seen to support yogic practices as an alternative therapy for improving mental health, there exists a research gap for more pragmatic studies to approve the Suryanamaskar as a recommendable practice for plummeting stress in postpartum women. Thus, the study aims at the evaluation of the effect of the Suryanamaskar on stress in delayed-postpartum Indian women, by daily online routine of a the Suryanamaskar-based yoga practice module.

Methodology

Population and Sample

In this interventional study 39 healthy postpartum Indian women, between the age of 25 and 35 years, who were 3-6 months postpartum were selected for the 3-month Suryanamaskar-based intervention using a purposive, convenient sampling method. These sessions were conducted online due to the covid restrictions. Participants'

consent was obtained after a thorough explanation of all the potential dangers and advantages of the intervention. The participants were also asked to get verbal consent from their respective Obstetric-Gynecologist to ensure their physical preparedness for the intervention before joining the module practice.

Design

The design was a 3-group, pre-post design. Participants were divided into 3 groups – Group 1 (fast-paced Suryanamaskar) and Group 2 (slow-paced Suryanamaskar) received the intervention and Group 3 was the control group. All the participants were assessed before starting the intervention (i.e., at base) and post-data was collected within 7 days of intervention completion.

Intervention

The participants in groups 1 (n=13) and 2 (n=12) underwent the 3-month Online Suryanamaskar practice sessions under expert guidance for 30 minutes, 5 days a week. These sessions were held in the duration of August 2021 to February 2022. The interventional model consisted of Omkar chant, simple postures, the Suryanamaskar, and Shavasana. Group 1 practiced fast-paced Suryanamaskar (16-20 rounds); while Group 2 practiced slow-paced Suryanamaskar (5-3 rounds). Group 3 (n=13) was the control group and hence, received no form of intervention.

Assessment

The Maternal Postpartum Stress Scale (MPSS) [2] questionnaire developed by Sandra NakićRadoš et al. was used to assess the effect of the online Suryanamaskar-based interventional practice on the stress levels in delayed-postpartum in Indian women.

Data Analysis

Out of 39 participants, data from 1 participant from the Slow-paced group was not included due to the lack of regularity in attendance. Data of participants who attended more than 50% of the interventional sessions were included in the study. Data assessment was carried out at the base (pre-intervention) and post-data was collected within 7 days of completing the intervention using the MPSS questionnaire. A two-sample paired T-test for means was used to calculate and analyze the collected data using the Microsoft Excel software.

Results

Following the 3-month online, Suryanamaskar based interventional module, a very significant decrease was seen in the levels of stress in postpartum women of Group 1 ($p < 0.05$), Group 2 ($p < 0.01$), Groups 1 and 2 combined ($p < 0.01$); while no significant change was recorded in women of Group 3 (control group).

	Group 1 Fast-paced Suryanamaskar	Group 2 Slow-paced Suryanamaskar	Group 1 + Group 2 Interventional	Control group
Pre-test Mean (n=13)	28.08	27.42	27.76	20.15
Post-test Mean (n=13)	23.69	18.00	20.96	20.00
Pearson Correlation	0.9000	0.8489	0.8331	0.8836
df	12	11	24	12
t Stat	2.2876	4.2083	4.4644	0.1714
P value	*0.0411	**0.0015	**0.0002	0.8668 (ns)

Table 1: Effect of Suryanamaskar based interventional module on the levels of stress in postpartum women. Two-sample paired Student T-test analysis, statistically significant - * $p < 0.05$, * $p < 0.01$. ns= not significant

Discussion

The present pilot study, intended to assess the effect of the Suryanamaskar on stress in delayed-postpartum Indian women, shows an overall significant decrease in the levels of stress in the participants. Table 1 represents Group 1's recorded scores. A significant fall was recorded in the said group at $p < 0.05$. Table 1, on the other hand, represents Group 2's score where a significant drop, too, was recorded at $p < 0.01$. Though the pre-mean scores of the former (28.08) and latter (27.42) were very close, the post-mean scores show a great difference between the Group 1 (23.69) and Group 2 (18.00) indicating that Slow-paced Suryanamaskar had a better effect on stress reduction as compared to its fast-paced counterpart. When the scores of both these groups were combined to see the overall effect of the interventional practice irrespective of its pace, a significant stress reduction was still seen at $p < 0.01$ indicating, that whether slow or fast, the Suryanamaskar-based yoga module was effective in alleviating stress among delayed-postpartum women. When Group 3 data was analyzed, though it had the lowest pre-mean score of the three, there was no significant reduction noted in the post-mean score (Table 1).

Sahni PS et al. in their cross-sectional study established yoga as an effective self-management tactic that helped cope with psychological challenges of stress, anxiety, and depression, as well as maintain wellbeing during the lockdown of the Covid-19 pandemic [5]. Another study by Rachel et al. also recorded noteworthy reductions in stress and other psychological health parameters in the participants who practiced Yoga over 16 weeks; while the participants who did not receive the yoga intervention for the first 8 weeks also showed a remarkable decrease in stress, anxiety, depression, and insomnia levels after they were crossed over from the waiting list and introduced to yoga practice for next 8 weeks [13].

The fact, that the results found in the current study are on par with the previous studies and suggests the strong success of the proposed Suryanamaskar-based yoga module. Thus, the present attempt, to assess the effect of the Suryanamaskar on stress in delayed-postpartum

Indian women, sustains that even with a short duration intervention, one can still reap the prolific effects of the Suryanamaskar as every yoga-based practice holds the power to assuage all forms stress.

Stress, a factor commonly associated with the postpartum phase, is like a ticking bomb that if not attended to in time, can become a welcome mat for depression, anxiety, and other similar complexities of the postpartum phase. Though the given study shows a significant reduction in stress levels of delayed-postpartum women, it was limited to a very small sample population and perhaps, may not regenerate similar results if attempted on a larger sample pool. Also, if the session time or intervention period could be longer instead of the short-term duration and if the interventional module could incorporate pranayama or meditational practices, it could have, maybe borne even better results than the one seen in the current study.

Conclusion

Pregnancy and the postpartum period are great Life-changing phases in a women's life that demand an enormous physical and mental toll. Nevertheless, if one can alter the outlook toward these circumstances and accept healthy coping mechanisms like The Suryanamaskar and other yoga-based practices into one's daily routine to channel and manage any form of stress that comes along, a great constructive transformation can be seen in oneself. Postpartum maternal stress, which has the potential to ignite and attract other postpartum physical and mental health challenges in women if not addressed in time, can be easily tackled by introducing basic yogic lifestyle practices in one's routine life even for a bare minimum of 30-minute as reflected in the current study. Hence, despite being delimited to a small group of participants with a very short intervention time, the current pilot study shows the great scope of the Suryanamaskar in improving postpartum maternal stress and should be explored more.

Compliance with ethical standards Not required.

Conflict of interest The authors declare that they have no conflict of interest.

References

- [1] Nadholta P, Bali P, Singh A, Anand A. Potential benefits of Yoga in pregnancy-related complications during the COVID-19 pandemic and implications for working women. *WOR* 2020;67:269–79. <https://doi.org/10.3233/wor-203277>.
- [2] Nakić Radoš S, Brekalo M, Matijaš M. Measuring stress after childbirth: development and validation of the Maternal Postpartum Stress Scale. *Journal of Reproductive and Infant Psychology* 2021;1–13. <https://doi.org/10.1080/02646838.2021.1940897>.
- [3] Troy NW. Is the Significance of Postpartum Fatigue Being Overlooked in the Lives of Women? *MCN, The American Journal of Maternal/Child Nursing* 2003;28:252–7. <https://doi.org/10.1097/00005721-200307000-00009>.
- [4] An R, Chen X, Wu Y, Liu J, Deng C, Liu Y, et al. A survey of postpartum depression and health care needs among Chinese postpartum women during the pandemic of COVID-19. *Archives of Psychiatric Nursing* 2021;35:172–7. <https://doi.org/10.1016/j.apnu.2021.02.001>.
- [5] Sahni PS, Singh K, Sharma N, Garg R. Yoga an effective strategy for self-management of stress-related problems and wellbeing during COVID19 lockdown: A cross-sectional study. *PLoS ONE* 2021;16:e0245214. <https://doi.org/10.1371/journal.pone.0245214>.
- [6] Mollard E, Kupzyk K, Moore T. Postpartum stress and protective factors in women who gave birth in the United States during the COVID-19 pandemic. *Womens Health (Lond Engl)* 2021;17:174550652110421. <https://doi.org/10.1177/17455065211042190>.
- [7] Dalpati N, Jena S, Jain S, Sarangi PP. Yoga and meditation, an essential tool to alleviate stress and enhance immunity to emerging infections: A perspective on the effect of COVID-19 pandemic on students. *Brain, Behavior, and Immunity - Health* 2022;20:100420. <https://doi.org/10.1016/j.bbih.2022.100420>.
- [8] Perzow SED, Hennessey E-MP, Hoffman MC, Grote NK, Davis EP, Hankin BL. Mental health of pregnant and postpartum women in response to the COVID-19 pandemic. *Journal of Affective Disorders Reports* 2021;4:100123. <https://doi.org/10.1016/j.jadr.2021.100123>.
- [9] Chow A, Dharma C, Chen E, Mandhane PJ, Turvey SE, Elliott SJ, et al. Trajectories of Depressive Symptoms and Perceived Stress From Pregnancy to the Postnatal Period Among Canadian Women: Impact of Employment and Immigration. *Am J Public Health* 2019;109:S197–204. <https://doi.org/10.2105/ajph.2018.304624>.
- [10] Suárez-Rico BV, Estrada-Gutierrez G, Sánchez-Martínez M, Perichart-Perera O, Rodríguez-Hernández C, González-Leyva C, et al. Prevalence of Depression, Anxiety, and Perceived Stress in Postpartum Mexican Women during the COVID-19 Lockdown. *IJERPH* 2021;18:4627. <https://doi.org/10.3390/ijerph18094627>.
- [11] Stepowicz A, Wencka B, Bieńkiewicz J, Horzelski W, Grzesiak M. Stress and Anxiety Levels in Pregnant and Post-Partum Women during the COVID-19 Pandemic. *IJERPH* 2020;17:9450. <https://doi.org/10.3390/ijerph17249450>.
- [12] Nagendra H. Yoga for COVID-19. *Int J Yoga* 2020;13:87. <https://doi.org/10.4103/ijoy.ijoy2720>.
- [13] Maddux RE, Daukantaitė D, Tellhed U. The effects of yoga on stress and psychological health among employees: an 8- and 16-week intervention study. *Anxiety, Stress, and Coping* 2017;31:121–34. <https://doi.org/10.1080/10615806.2017.1405261>.
- [14] Wheeler A, Wilkin L. A Study of the Impact of Yoga Āsana on Perceived Stress, Heart Rate, and Breathing Rate. *International Journal of Yoga Therapy* 2007;17:57–63. <https://doi.org/10.17761/ijyt.17.1.c0607635w8887x75>.
- [15] Atici E, Doymaz F, Kendal K, Gülşen M, Dan Me. The Effects of Yoga on the Health Profile, Depression and Anxiety Levels of the Individuals During the COVID-19 Pandemic Process: A Randomize Trial. *J Tradit Complem Med* 2021;4:369–75. <https://doi.org/10.5336/jtracom.2021-82688>.