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THE EFFECT OF INTEGRATED YOGA MODULE ON QUALITY OF LIFE IN SECOND TRIMESTER IN ANTENATAL COHORT

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ABSTRACT

Introduction *Pregnancy is a unique phase in the life of a woman. While it is an exciting time, filled with expectations and hopes for a new future; it is also fraught with dramatic changes at a physical, mental, emotional and hormonal level. The duration of nine months isdivided into three trimesters wherein distinct changes are observed in the physical body as itprepares for labour and delivery. At a mental level, mood swings, anxiety, depression may manifest. The quality of life of the pregnant woman is crucial to a positive delivery outcomeas the level of satisfaction, happiness, physical well-being and selfcare directly affect the foetus in vitro.*

Objective:*To investigate the effect of integrated yoga protocol module on dimensions of quality-of-life satisfaction pertaining to happiness, physical wellbeing and selfcare amongpregnant women in their second trimester.*

Methodology: *The study was a randomized pre and post, experimental and control study with assessment at the beginning and end of a three-month period conducted at the obstetricsand gynaecology department of GMERS Sola hospital with 180 participants*

Results: *Data was analysed using SPSS. It resulted in p-value being below the significancelevel (0.01). In intergroup, independent sample t test was applied. Here, dimension of life satisfaction, the overall mean of experiment group was found to be higher at 12.88 as compared to 11.82 of the control group. Also the calculated t-value of 6.875 at df=178 was found to be significantly larger than the critical t-value. Similar results were observed with happiness and physicalwellbeing and selfcare. With intragroup paired sample t tests, the calculated t- value of 9.13 and a significance level of 0.01 (α = 0.01) with 89 degrees of freedom, indicated a statistically significant difference between the paired samples. Findings were similar in levels of happiness and physical wellbeing and selfcare strongly suggesting a statistically significant positive result after yoga intervention.*

Discussion*:The results of this investigation were consistent with the findings of other studies conducted in this field. Factors supporting the efficacy of antenatal protocol, it's mechanism and scientific rationale could be regulation of HPA (hypothalamus, pituitary and adrenal) axis, reduction of fluctuation in hormonal levels and balance in the autonomic nervous system. The activation of parasympathetic nervous system due to practices such as Om chanting yoga nidra and meditation in addition to asanas and pranayama appropriate during pregnancy is also a distinct possibility.*

Conclusion*:It was concluded that integrated yoga module significantly improved the quality of life in pregnant woman. Integrated yoga module could be efficacious in ameliorating quality of life and helpful as a viable intervention along with standard medical care during pregnancy.*

Research Implications*: The results of this study demonstrate that an integrated yoga module developed for the antenatal cohort, administered under expert guidance could be a vital component in antenatal care. In conjunction with standard medical treatment and supervision, antenatal yoga intervention module may be viable as an efficacious holistic, non- pharmacological intervention in the enhancement of quality of life. The result of this study may serve as a template for use and a base for further work in this area.*

Keywords: *quality of life, antenatal yoga, life satisfaction, happiness, selfcare, physical wellbeing*

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INTRODUCTION The practice antenatal yoga is known to have multiple benefits(Cowlagi & Maheshwari, 2023) at a physiological level such as reduction in back pain, improving blood circulation, reducing (Chuntharapat et al., 2008) labour pain. Several studies (Kwon etal., 2020) demonstrate that when pregnant women practice yoga it leads to positive birth outcomes. At a mental and psychological level antenatal yoga is documented (Chung et al., 2012; Evans et al., 2020; Field et al., 2013) to reduce anxiety, and (Ng et al., 2019) depression.

OBJECTIVES

(1) To investigate the effect of integrated yoga module on the quality of life amongpregnant women
(2) To investigate the viability of practising antenatal yoga during second trimester

HYPOTHESES

(1) There is no significant effect of integrated yoga module on life satisfaction duringantenatal period.
(2) There is no significant effect of integrated yoga module on happiness duringantenatal period.
(3) There is no significant effect of integrated yoga module on physical wellbeing andself-care during antenatal period

METHODOLOGY

Research Design The study was a randomized pre and post, experimental and control study. Sample size and selection criteria: 180 pregnant women (aged 20-40 years) living in the catchment area of GMERS hospital at SOLA (comprising of Ahmedabad, Sarkhej, and surrounding regions), constituted the sample of this study. These participants were randomlyassigned to two groups of 90 each forming control and experimental group. One group was given Treatment As Usual (TAU) The other group was given antenatal yoga practice intervention protocol taught by a qualified and experienced yoga teacher. Ethics committee approval and approval of the scientific and technical committee from GMERS Sola Civil hospital and medical college were obtained. Prior to enrolling in the study, permission was sought and a signed consent was obtained from all participants on a form translated in Hindi,Gujrati and English languages. Data collection and study was carried out over a period of twelve months, where integrated yoga module was administered in three monthly segments.

INCLUSION CRITERIA

1. Women who tested positive for normal pregnancy by the Obstetrics and Gynaecologydepartment of GMERS hospital and medical college in Sola.
2. Those who gave free consent and were willing to participate in the study.
3. Women from nine weeks of pregnancy to twenty-five weeks of pregnancy.

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EXCLUSION CRITERIA

1. Patients diagnosed as having high risk or those with comorbidities.
2. Patients carrying twins or multiple zygotes.
3. Those living outside the jurisdiction of the hospital catchment area.
4. Those beyond twenty-six weeks of gestation.
5. Consumable Booklet of QOLS- SSNN
6. Patients who were not on psychiatric medication.

Impact of intervention was assessed as per schedule given below:

a. Basal Assessment -0-day (i.e. onset of the experiment)
b. Second follow up Assessment – day 90 (i.e. end of 03 months)

INTERVENTION MODULE Antenatal protocol was developed, after carrying out a survey amongyoga instructors and among gynaecologists, a pilot test was conducted to study the feasibility and thisprotocol Cowlagi, S., & Maheshwari, V. (2023) was administered by an antenatal yoga expert with a team of medical professionals on standby at the hospital premises four times a week for a period of three months. The protocol included practices specific for pregnancy including chanting, asana, pranayama, meditation, and guided relaxation.

ASSESSMENT TOOL The efficacy of intervention was assessed by using the Quality-of-life Scale by Sarika Sharma and Dr Nakhat Nasreen from the National Psychological Corporationof India in Agra. A scanned copy of the scale is included in the appendix

DATA ANALYSIS Statistical analysis of data collected was done using SPSS

TABLE AND GRAPHS

Inter Group Independent Sample t Tests

	Phase	Mean	SD	SED	t Value	Level of Significance
Life Satisfaction	Experimental Group (Post)	12.88	1.348	0.154	6.875	Signigicant at 0.01 Level
	Control Group (Post)	11.82	0.552			
Happiness	Experimental Group (Post)	12.59	1.655	0.187	4.343	Significant at 0.01 Level
	Control Group (Post)	11.78	0.632			
Physical Wellbeing and Self Care	Experimental Group (Post)	12.2	1.559	0.186	2.63	Significant at 0.01 Level
	Control Group (Post)	11.71	0.824			
		df = 178				

Intra Group Paired Sample t Tests

	Phase	Mean	SD	SED	t Value	Level of Significance
Life Satisfaction	Pre	11.69	0.713	0.13	9.131	Significant at 0.01 Level
	Post	12.88	1.348			
Happiness	Pre	11.71	0.604	0.17	5.162	Significant at 0.01 Level
	Post	12.59	1.655			
Physical Wellbeing and Self Care	Pre	11.51	0.939	0.163	4.222	Significant at 0.01 Level
	Post	12.2	1.559			
	df = 89					

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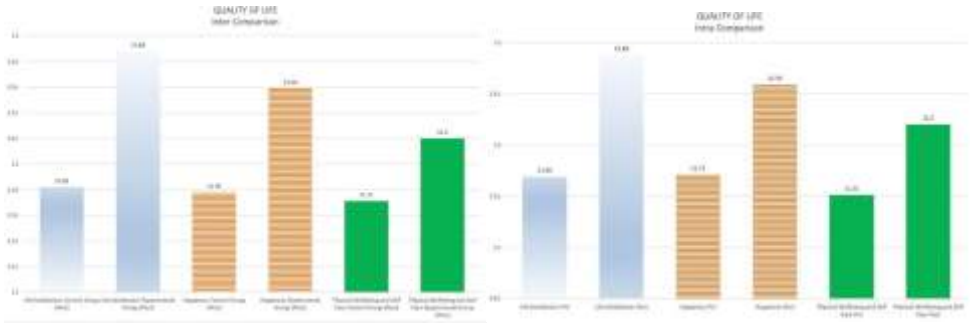

RESULT

In intergroup, independent sample t tests was applied. In dimension of life satisfaction, the overall mean of experiment group was higher at 12.88 as compared to 11.82 of the control group. As significance level (α) was set at 0.01, p-value was observed to be less than α. Also the calculated t- value of 6.875 at df=178 was found to be significantly larger than the critical t-value, strongly suggesting evidence to reject the null hypothesis for life satisfaction. Similar results were observed with happiness and physical wellbeing and selfcare. With intragroup paired sample t tests, calculatedt- value of 9.13 and a significance level of 0.01 (α = 0.01) with 89 degrees of freedom, the result indicates a statistically significant difference between the paired samples, leading to rejection of the null hypothesis. Findings were statistically similar in levels of happiness and physical wellbeing andselfcare.

DISCUSSION

The results demonstrate consistency with other studies done in this area. Another study showed that (Rakhshani et al., 2010) yoga practice significantly improved quality of life domains such as the physical domain (P = 0.001), psychological domain (P= 0.001), socialdomain (P = 0.003), compared to those who did not get yoga intervention. A review of 13 studies done on quality of life, (Liu et al., 2019) found that yoga significantly improved quality of life compared to other forms of exercise.

On the dimension of physical wellbeing and self-care, the study results demonstrate elevated levels in the group that practiced yoga. Here, a corelation to the performance practice of asana or the postural component of integrated yoga protocol in conjunction with breathing techniques can be made. Physical alignment in asana practice, as well as dynamic movementsseem to be a contributing factor to physical wellbeing among participants. The sequence of asanas was developed after twenty five years of working with pregnant women in New York,Singapore and India. Sukshma vyayam or yogic practices comprising movement of the neck, hands, pelvis, legs were included for improving blood circulation and for facilitating balanceof the five principle pranas and vayus within the body. In particular asanas such as baddha konasana, chakki chalana and upavishta konaasana (Satyānanda, 2009) were included, the rationale for this was to harness apaana vayu or the downward subtle energetic wind which iscrucial during childbirth. Antenatal yoga may have a positive impact on pelvic strengthening, and backache (Hu et al., 2020; Saxena et al., 2017). In other allied studies, it has been observed that yoga during pregnancy could help improve musculoskeletal, cardiac as well as mental health (Bhardwaj & Nagandla, 2014; Büssing et al., 2012) conditions.

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According to the yoga sutra 2.46 as expounded by Maharishi Patanjali, the definition of practice of asana is given as 'sthiram sukham, asanam'(Bryant, 2009). The implication is thatasanas should be stable, done with ease and happiness. Sukha or happiness is the cornerstoneof practice. The feeling of amelioration in happiness levels and emotional regulation(Menezes et al., 2015) in the group that practiced yoga could be due to activation ofparasympathetic nervous system due to practices such as yoga nidra and meditation in addition to asanas and pranayama appropriate during pregnancy. Joyfulness, is experienced as a product of calibrated consistent practice during pregnancy.

Life satisfaction is another dimension where the study found a significant difference betweenthe control and experiment group. Antenatal yoga as a nonpharmacological intervention is efficacious in reduction in anxiety, depression (Bojja & Jayashree, K. and Vijayaraghavan, R., 2019; Evans et al., 2020; Field et al., 2013) as measured through cortisol levels and otherphysiological markers such as regulated blood pressure and lipid profile. The inclusion of pranayama practices such as om chanting and bhramari (Anjana et al., 2022; Mooventhan &Khode, 2014; Rao et al., 2018) based on sound resonance function to promote relaxation response in the pregnant woman and result the experience of feeling calmer after practice. The efficacy of antenatal protocol it's mechanism and scientific rationale could be due to regulation of HPA (hypothalamus, pituitary and adrenal) (Glover et al., 2010) axis and thereduction of fluctuation in hormonal levels and balance in the autonomic nervous system.

Thus, evidence based research, consistent with other studies in this area demonstrates a positive impact of integrated yoga protocol module on dimensions of quality of life satisfaction pertaining to happiness, physical wellbeing and selfcare among pregnant womenin their second trimester. These findings could be useful to policymakers, stakeholders and agencies invested in women's reproductive health.

CONCLUSION

As the p-value is below the significance level (0.01), it demonstrates that the observed difference in the quality of life after the integrated yoga module practice is unlikely to have occurred by chance alone. Based on the analysis of data sets, the p-value indicates that thereis strong evidence to reject the null hypothesis. It can be concluded that the integrated yoga module had a significant effect on positive amelioration in dimensions of quality-of-life satisfaction pertaining to happiness, physical wellbeing and selfcare among pregnant womenin their second trimester.

In summary, the results of this study demonstrate that an integrated yoga module developed for the antenatal cohort, administered under expert guidance has potential to become a vital component in antenatal care. In conjunction with standard medical treatment and supervision,antenatal yoga intervention module may be viable as an efficacious holistic, non- pharmacological intervention in the enhancement of quality of life. The result of this study may serve as a template for use and a base for further work in this area.

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APPENDIX
QUALITY OF LIFE QUESTIONNAIRE

Sarika Sharma (Aligarh) & Dr. Nakhat Nasreen (Aligarh)	Consumable Booklet of QOLS-SSM English Version

Please Fill in the following information Date _____
Name _____
Father's Name _____
_____ Date of Birth _____ Sex: Male _____ Female _____
Qualifications _____
Occupation: Student _____ In Job _____ Experience in years __ Area: Urban _____ Rural _____
Institution _____

Instructions

On the following pages there are 42 statements related to Quality of Life. Kindly read each statement carefully and decideyour response on three points. **Always, Seldom,** and **Never** andput a ☐ mark in the appropriate box which is nearer to your response.
Kindly give your response in all the 42 statements. Be assured, your responses will be kept confidential

Scoring Table

	Raw Score			Z Score	Grade	Level of QOLS
Page	2	3	4			
Score						
Total						

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Consumable Booklet of QOLS- SSNN

Sr No.	Statements	Always	Seldom	Never	Score
1.	I am satisfied with my present life.				
2.	I am being cared by people around me				
3.	I help people in my neighborhood whenever they need me				
4.	I feel delighted on visiting my friends and neighbours.				
5.	I am satisfied with my present job/household duties.				
6.	I am satisfied with my achievements in my job or in my life.				
7.	I have achieved maximum goals in my life.				
8.	I am clear about my life goals and I am effectively making them a reality.				
9.	My spiritual and religious beliefs give me satisfaction				
10.	My fear of God is the guide to my life's success				
11.	I feel myself fortunate when I help people				
12.	I feel guilty of doing wrong deeds.				
13.	I feel myself elevated and appreciated in the society.				
14.	I enjoy my life and feel delighted in living.				
15.	Even smaller things in life are a matter of joy.				
16.	My home and my family are sources of joy.				
17.	I wish to attain success in all spheres of life.				
18.	I believe in the proverb that every cloud has a silver Lining				
19.	I am always hopeful for every betterment of my life.				
20.	I don't have a sound sleep				
21.	Idon't like to talkto anybody when I'm in stress				
22.	I need something in form of medicine or treatment for stress reduction.				

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23.	I adopt mechanisms such as yoga, long walk, meditation to reduce tension.				
24.	I easily get upset when neglected/humiliated by others				
25.	I don't recover easily after doing hard work				
26.	I am depressed for no apparent reason				
27.	I am constantly in a state of fatigue				
28.	I am able to adjust well in new situations				
29.	I think and act independently without being interfered by others.				
30.	I don't have quarrels with others				
31.	I feel myself to be emotionally secure				
32.	I have sound health				
33.	I am conscious of my health and body care				
34.	I never any of my ailments uncared or unattended.				
35.	I find my appearance quite presentable				
36.	I have enough energy to do daily routine work				
37.	I can take decisions on my own.				
38.	I complete the work assigned to me whole heartedly and in tune				
39.	I am satisfied with what I am				
40.	I celebrate special events of my life.				
41	I welcome suggestions from other people to improve myself.				
42	I am hopeful of society's welfare and betterment.				