ORIGINAL RESEARCH

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A STRUCTURED PHYSICAL ACTIVITY AND HEALTH CARE EDUCATION BEATS POSTPARTUM DEPRESSION FOR PRIMIPARA MOTHERS: A PILOT RANDOMIZED CONTROLLED TRAIL

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ABSTRACT

Background: First time mothers in particular may feel anxious about how they are going to cope with looking after themselves and their newborn. Most Indian women believe that they have little or no control over their pregnancies or outcomes. The aim of this study was to evaluate the effect of a Structured Physical Activity and Health Care Education program on the psychological well-being for Primipara mothers in postpartum period.

Methods: This study was a Randomized Controlled Trail. Primipara mothers who were ready for discharge from The Narayana Medical College & General Hospital in postnatal ward were eligible for this study. Forty one (41) Primipara mothers randomized onto the trail. The experimental group(n = 20) received an 4 week "Structured Physical Activity" (SPA) program, including Structured Physical Activity provided by a team of health care professionals combined with parenting education & counseling. The other group (n = 21) Health Care Education Only (HCEO) received only the same educational material as the experimental group. In pre and post schedule outcome measures of both SPA&HCEO groups were assessed with Psychological well-being (Positive Affect Balance Scale), Depressive symptoms (Edinburgh Postpartum Depression Scale), and Physical activity were assessed at baseline, 4th week and then 8th week later.

Results: The improvement was significantly high in well-being scores, depressive symptoms and physical activity of the (SPA) group compared with the (HCEO) group over the study period and this effect was maintained 8 weeks after completion of the program.

Conclusion: A Structured Physical Activity and Health Care Education program is effective in improving the well-being for Primipara mothers in postpartum period. Continuous use of this program may reduce long-term problems such as postpartum depression and it will change the women's Physical, emotional and social health.

Key words: Primipara mothers, Psychological well-being, postpartum depression, Structured Physical Activity, Health Care Education

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INTRODUCTION

Becoming a mother is an important stage in every woman's life. Most different period for women is their growth into parenthood is precisely this postpartum period. First time mothers in particular may feel anxious about how they are going to cope with looking after themselves and their newborn.[1]Most Indian women believe that they have little or no control over their pregnancies or outcomes. The confinement period, generally initial 6 weeks is accepted to be a defenseless period for the primipara mothers and this period significant progressions of both hormonal and social beginning happen ceaselessly. Post pregnancy anxiety is thought to advance from neuro-endocrine changes, for example, pregnancy anxiety, and identity inclination, and in addition a blend of other factors.[2]

The National Health and Medical Research Council (NHMRC) have recognized Postnatal depression (PND) as a serious condition which can be the first episode of mental illness.[3] Postpartum depression is common and its occurrence has estimated as being between 10-15% in different countries and cultures worldwide e.g. Kumar and Robson 1984, Stein 1991, Cox et al. 1987, Jadresic 1995. Many studies have found that PND can lead to ongoing health and social problems for the mother and her family. Beyond the depression itself, mothers can experience physical, social and vocational difficulties. [4]

With the end goal of this study, physical activity was the significant affecting element in PND. Notwithstanding, other impacting elements including physiological components (BMI and type of delivery), situational variables (self and childcare, Infant temperament, and family income) and mental variables (the enthusiastic requests between relatives) were considered. These impacting components may associate with one another, however can additionally have an effect on how exhaustion and mind-set are accomplished. In our study, we assessed the effects of the SPA program on the mental wellbeing results of postnatal primipara mothers. We speculated that primipara mothers taking an interest in the SPA program would have higher prosperity scores and lower hazard for post pregnancy anxiety contrasted and ladies who were not partaking in the study. Such a programmed schedule is achievable to convey and, if indicated to be viable in decreasing the danger for PND, it would make a critical commitment to the wellbeing of primipara mothers.

METHOD

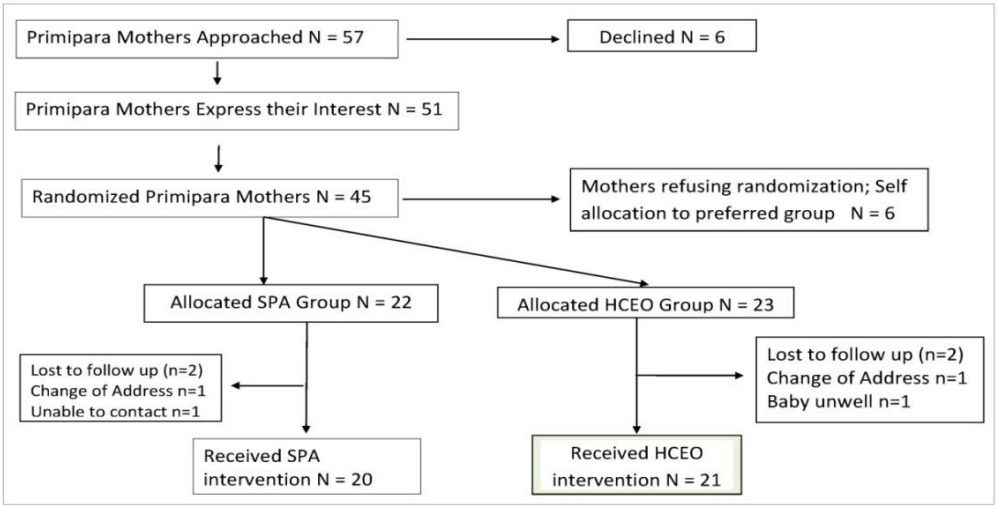
Ethics approval for this study obtained from the Narayana Medical institutional Ethical committee at Narayana General Hospital, and all participants gave informed consent on both English and Telugu languages. This study was an RCT evaluating the effect of the SPA program, commencing at 4 to 8 weeks postpartum, on the psychological well-being of primipara mothers. Recruitment for the study conducted between March 2011 and February 2012.

Inclusion criteria: All primipara women who were ready for discharge from postpartum ward in Narayana General Hospital included.

Exclusion criteria: Mother with serve postnatal depression that required inpatient psychiatric treatment, had psychotic symptoms or were known pregnant excluded.

CONSORT FLOW CHART:

Structured Physical Activity (SPA), Health Care Education (HCE) & Health Care Education Only (HCEO)



All primipara mothers assigned randomly to either the SPA group or the HCEO group. The HCEO group received written educational material directly or through volunteer to them every week over 8 weeks. Education topics covered adjusting to a new lifestyle, nutritional care, baby care and postural advice for mother and baby and general postnatal awareness. Contact details of health care personnel also were included in this written information.

The SPA framework steered once for consistently for 8 weeks at Obstetrics wellbeing classes in the two sessions in a day at Narayana Medical College and General Hospital. Each one preparation session classifieds into three stages, first stage involve 15 minutes general and particular appraisal, second stage we present the activity with or without their infant and accomplice. The last stage comprises 30 minutes structured physical activity facilitated by a physical therapist & trained midwives in the postpartum wards. Every session according to individual mother's need we can modify the exercise module.

Structured exercise sessions consisting of a warm-up, cardiovascular intervals, body toning, core pelvic floor exercises, followed by cool down with stretching. A progress check and program review is incorporated into each three session. Sessions will generally once in week after week for 8 weeks after the postnatal period. Furthermore, the SPA gathering got the same composed instructive material as the HCEO bunch. In the most recent week of the project, all the mentors, moms, infant and accomplice assembled. Both gatherings got a booklet holding charts of every last one of activities gave over course of the system, and additionally an arrangement utilized nearby deliberate physiotherapy assets to aid them in proceeding with their activity at home.

Method of evaluation and follow-up

All Primipara moms asked to finish the surveys at 4 weeks postpartum (benchmark) and 8 weeks from pattern. The questionnaire booklet held a well-being scale (the positive Affect Balance Scale PABS), a depression scale (Edinburgh Postpartum Depression Scale EPNDS), and questions with respect to the measure of physical action (minutes per week) embraced.

In our study PABS was primary outcome measure, it has 10-questions that indicates positive and negative psychological reactions of people in the general population to events in their daily lives. [5] Responses to the questions, which are made according to a 3-point scale of "never," "sometimes," or "often," reflect experiences in the previous week. A positive affect score, a negative affect score, and a total affect balance score can be calculated. This study used the positive affect score (ranging from 5 to 15), with 15 being the maximum (most positive) score. This scale is a reliable measure of psychological well-being.[6]

The secondary evaluation measures were the EPNDS; there are 10 questions responses in the questionnaire and scored 0, 1, 2, or 3 according to the severity of the symptoms. The total score is calculated by adding together the scores for each question. Primipara mothers are asked to underline the responses to ten questions that most reflect how they have been feeling during the past week. The assessor calculates the total score (in the range 0 to 30), and scores of 12 or more indicate that the mother is likely to be suffering from PND. Our study validation has shown a high reliability between EPDS results and the incidence of depressive illness.

Final outcome evaluation measure was physical activity it has three questions about type, duration, and frequency of physical activity in postpartum period. They undertook at baseline of 4th week and 8th week of the study period. These questions based on the American College of Sports Medicine and American Heart Foundation's most recent exercise guidelines, which recommend that the average adult who has healthy should participate in 30 minutes of moderate-intensity aerobic exercise three times weekly and 4 to 6 strength training and stretching exercises with 6 to 12 repetitions of each exercise.[7] The total duration of formal physical activity per week was determined (minutes per week) and compared between the 2 groups across the baseline and 4week later time periods.

DATA ANALYSIS

Data analyzed using Graph pad Prism-4 & SPSS version 11. We calculated PABS and EPNDS scores and amount of physical activity for both groups were compared over the 2 time periods using a mixed model analysis of covariance, with group as a between-subjects factor and time as a within-subject factor and baseline score. Linear regression was used to examine the factors predicting PABS and EPNDS scores. Finally nonparametric tests also used for other analyses.

RESULTS

Table- 1

Characteristic	SPA Group(n = 20)			HCEO Group (n = 21)			
	X	SD	Range	X	SD	Range	P
Mother's age(y)	26.3	4.0	21-30	25.1	5.3	21-32	0.41
Weight (kg)	67.4	10.6	46.5-80.5	69.2	12.2	50-83.2	0.61
BMI							
		N = 20	%		N = 21	%	
Under/Normal Wt.(< 25)		11	55		14	66.66	0.71
Over Wt. (> 25to < 30)		7	35		5	23.80	
Obese (> 30to < 40)		2	10		2	9.52	
TYPE OF DELIVERY							
		N = 20	%		N = 21	%	
Caesarian birth		8	40		8	38.10	0.91
Vaginal birth		12	60		13	61.90	
TYPE OF FAMILY							
Nuclear		4	20		8	38.09	0.11
Extended		16	80		13	61.90	
EDUCATION							
Not able to read and write		2	10		3	14.29	0.67
Educated		18	90		18	85.71	
OCCUPATION							
Homemaker		15	75		12	57.14	0.94
Others		5	25		9	42.86	
EMPLOYMENT							
Full-time		5	25		9	42.86	
Part time		6	30		7	33.33	0.38
Unemployed		9	45		5	23.81	

Forty two primipara mothers were randomly assigned to either the SPA group or the HCEO group. Overall 57 Primipara mothers approached with study recruitment, 51 (89.47%) agreed, 6 (10.52%) were declined. From those participants that randomized (n = 45) only, Due to the personal family reasons other six mothers refused randomization. Those 45 eligible mothers were allocated (n = 22) in SPA group, (n = 23) were in HECO group (recruitment rate was 4-5 primipara mothers per month).

The demographics of the cohort

In our study most of the participants aged "between" 23-27; of those less than 10% were obese and more than 60% has living with their extended family. Most of the Primipara mothers were educated, over all less than 12% were not able to read and write in both groups. Those 41 participants less than 40% mothers got Caesarian delivery. The difference between both group were significant (P < .05) and their characteristics are summarized in table 1.

Table-2

Never Commencing Intervention	SPA Group(n = 2)	HCEO Group (n = 2)
Change of address	n = 1	n = 1
Unable to contact	n = 1	-
Baby unwell	-	n = 1

Two mothers assigned to the SPA group and 2 Primipara mothers assigned to the HCEO group did not receive the allocated intervention for the reasons mentioned in Table 2. These participants were not included in the study analysis. The remaining participants who commenced the intervention (SPA group, n = 20; HCEO group, n = 21) were all included in the analysis.

Table 3.1

Outcome measures of SPA & HCEO Group
Positive Affect Balance Scale (PABS)

Comparison	Positive Affect Balance Scale (SPA Group)					
	Base line	4th Week	Base line	8th Week	4th Week	8th Week
Mean	9.5	12.3	9.5	12.6	12.3	12.6
SD	0.50	0.65	0.50	0.50	0.65	0.50
Sig.	HS		HS		NS	
P-value	*P<0.001*		*P<0.001*		*p>0.05*	
Positive Affect Balance Scale (HECO Group)						
	Base line	4th Week	Base line	8th Week	4th Week	8th Week
Mean	9.47	9.80	9.47	9.90	9.80	9.90
SD	0.51	0.51	0.51	0.62	0.51	0.62
Sig.	S		S		NS	
P-value	*P<0.05*		*P<0.01*		*p>0.05*	

Outcome results shows there was significance between both SPA & HCEO group in PABS scores over time. Analysis of covariance and Post-hoc test showed a high significance between base line and 4th week, baseline and 8th week but no significance between 4th & 8th week in SPA group.

Table 3.2

Edinburgh Postpartum Depression Scale

Comparison	Edinburgh Postpartum Depression Scale (HECO Group)					
	Base line	Base line	Base line	Base line	Base line	Base line
Mean	7.76	7.52	7.76	7.72	7.52	7.72
SD	0.62	0.51	0.62	0.46	0.51	0.46
Sig.	NS		S		NS	
P-value	*P>0.05*		*P<0.001*		*p>0.05*	
Edinburgh Postpartum Depression Scale (SPA Group)						
	Base line	Base line	Base line	Base line	Base line	Base line
Mean	7.95	4.95	7.95	4.5	4.95	4.5
SD	0.75	0.68	0.75	0.60	0.68	0.60
Sig.	HS		HS		S	
P-value	*P<0.001*		*P<0.001*		*P<0.05*	

Comparing both groups EPDS scores, over the time period of baseline, 4th week and 8th week, Primipara mother in SPA group shows a reduced risk for PND and highly significance over time periods. After the 4th week there were no major changes in EPDS score in SPA group. Overall the proportion mothers in SPA & HCEO group with an increased risk for PND was reduced by 59%, 21% respectively.

Table 3.3

Physical activity (minutes per week)

Comparison	Physical activity (minutes per week) (SPA Group)					
	Base line	Base line	Base line	Base line	Base line	Base line
Mean	76.45	100.25	76.45	122.25	100.25	122.25
SD	5.05	5.73	5.05	12.08	5.73	12.08
Sig.	HS		HS		S	
P-value	*P<0.001*		*P<0.001*		*P<0.05*	
Physical activity (minutes per week) (HECO Group)						
	Base line	Base line	Base line	Base line	Base line	Base line
Mean	67.85	68.57	67.85	76.90	68.57	76.90
SD	5.37	5.03	5.37	8.87	5.03	8.87
Sig.	NS		HS		NS	
P-value	*P>0.05*		*P<0.001*		*p>0.05*	

There was highly significant mean difference in the amount of structured physical activity under taken by the SPA group than HCEO group at base line, and this was change only 13% over time in HCEO group, whereas percentage in the SPA group drastically changes in 8th week. Physical activity scores minutes per week for participants in SPA group were all significantly higher, and accounted for 74% of the variance in physical activity. Overall there was no significant difference in the mean score by the SPA and HCEO groups at base line. For all our outcome results reveals, there were no significant effects of age or parity.

DISCUSSION

Past studies have demonstrated that general activity enhances disposition states in primi[8] and Multipara mothers,[9] enhances well-being,[10] and prompts a lessening in depressive manifestations in mother diagnosed with PND. No clinical trials to date has been led postnatal in primipara moms who are solid nor has the impact of an organized physical action been researched.

Our study has demonstrated that the SPA program, including physical movement in addition to instruction, brought about a more prominent change in primipara mother's prosperity than training just intercession. A noteworthy diminished in postnatal indications of discouragement and, subsequently, a diminished number of moms for PND additionally enhance wellbeing watched. The Proportion of primipara moms who were at danger for PND, as measured by the EPNDS (39% of the SPA aggregate; 45% of the HCEO gathering) is like the predominance rate of PND globally 10 % - 15%.[11]

Matthew P. Herring etal[12] the researchers found, exercise sessions greater than 30 minutes were better are reducing anxiety than session of less than 30 minutes. But surprisingly, programs with duration of between first and fourth weeks seems to be more effective at reducing anxiety than those lasting more than 8 weeks. The researchers noted that study participants were less likely to stick with the longer exercise programs, which suggests that better participation rates result in greater reductions in anxiety. This RCT has indicated just pattern, fourth week to eighth week contrast in the measure of activity performed by the two gatherings. Essentially, the investigates recommend that a organized system with managed consideration can lead more higher amount of physical activity at early weeks connected with builds mental prosperity, regardless of the gathering to which the primipara moms were selected.

Sampselle et al[13] reviewed the benefits of physical movement on the mental prosperity of women on postnatal period. Although they didn't lead a clinical trial, their findings proposed that mothers who were more dynamic reported more fulfillment with parenthood and with their accomplices. These perceptions underpinned by reports that a solitary session of activity can bring about both an expand in positive disposition states and a lessening in negative temperament states. Above results are steady with the discoveries of our study.

In public, high-impact activities have a positive impacts on mood.[14] Specific rules on how practice can impact prosperity in diverse populace, including primipara moms and others, have failed to offer.[15] In our study, Structured Physical Activity (SPA) and Health Care Education Only(HCEO)including guiding and fortifying and cool down segments consistently throughout the schedule. In this study offered all SPA gathering

moms may help the viability of participation. The SPA Program is reliable with proposals given to Allied health services professionals to recommend activity to postnatal primipara moms with wretchedness.

In our RCT most primipara moms reported they reveled in the activities. Notwithstanding prior reports that cesarean conveyance was related danger of post pregnancy anxiety, a late study by patel et al[16] demonstrated that this was not the situation. In our study shockingly, cesarean moms likewise reported positive input at unequaled, our health care takers more focused on them standard one-on- one premise from onset. All these lead the remarkable study adherence (more than 95%) and the low dropout rate from SPA Program exhibit that it was practical for the moms to go to.

Our postnatal parental figures underscored the essentials of structure physical movement consistently and the moms had chance to create social network with other new moms while working out. In spite of the fact that these variables are well on the way to be paramount components of this practical intercession, it was unrealistic to figure out which segment of the SPA system had an impact on prosperity.

In our study, shows the proportion of women in the SPA & HCEO group with an increased risk for depression was reduced by 59%, 19% respectively after 8 weeks. From the feedback of group mothers, structured exercise and type of extended family have huge influences on an early postnatal period to reduce the PND for primipara mothers. The SPA system could help to deal with the disgrace connected with PND and avert PND in those women who were hazard.[17]

Our discovering addresses how the sort of family, instruction, and social relationship has impact on PND. This study not surveyed each individual impacting component how it impacts on, however these elements unequivocally connected with the lessening of weariness and depressive indications. Output of the study has constrained on it has discovering just primipara moms were incorporated and it cover-up little populous area. If further study will concentrate more extensive populous and measure the individual affecting component that it would helpful to address further research in PND for Postnatal moms.

CONCLUSION

In summary, our pilot RCT focused principally on the effect of a Structured Physical Activity and Health Care Education program on the psychological well-being for Primipara mothers in postpartum period. Combination of structured physical Activity & Health care Education that it supervised by a multidisciplinary team, individual and group health care education can improve the well-being of primipara mothers and reduce the risk for PND. The results of this study is generalized to all Postnatal mothers who are healthy and attending a maternity service. Evidence from a larger trail is needs on whether, with an effective intervention, it is possible to reduce PND in postnatal mothers.

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