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EFFECT OF EXERCISES IN POSTNATAL DEPRESSION IN SURAT

Names of authors : Dr. Snehal Patel (Assistant Professor), Ms.Bhumika Sutariya (Clinical Therapist)

Your Affiliation (designations with college address): Shrimad Rajchandra College of Physiotherapy, Uka Tarsadia University,Bardoli, Gujarat, India

Department of the Author is Shrimad Rajchandra college of Physiotherapy, Uka Tarsadia University, Bardoli--Gujarat.

1.1 Overview:

Postnatal depression is a major public health issue [1]. Almost one woman in four will experience depression at some point in her life [2] most commonly during the childbearing years [3, 4]. Postnatal depression is described as a dangerous thief

that robs women of precious time together with their infant that they had been dreaming of throughout pregnancy [5]. Approximately 10% of women suffer from

postnatal depression which is defined as a non – psychotic major depression inthe first few months after birth [6, 7].

As many as 18% of women are depressed during their pregnancy, with 13% having an episode of major depression and 14% having a new episode of depression during pregnancy [8]. Bennett et al found prevalence rates of

depression to be 7% in the first trimester, 13% in the second Trimester and 12% in the third trimester [9]. Pregnancy is a time of intense physical change and is associated with a great deal of emotional

upheaval in many women [10].

In addition to the obvious outward physical changes that accompany pregnancy. Significant increase in mental health problems, including depression and psychosis, occur during pregnancy and in the immediate postpartum period [11]. Women who experience postpartum depression are at increased risk for substance abuse, more likely to miss routine gynecologic and well- child appointment, less likely to adhere to health care provider recommendation, and also less likely to use preventive safety items, such as car seats and electrical outlet covers [12].

As well as the morbidity suffered by the mother , studies have found an association between postnatal depression and adverse effects on the child[13,14].Not only are a substantial number of women affected but there is also a high degree of impairment associated with this disorder[15].Depression has been identified as a leading cause of disability adjusted life year[15].Even in Normal pregnancies , women experience subtle changes that may alter their ability to carry out their usual roles and may detract from their overall health – related quality of life[17].This can cause a period of physical and emotional stress that canhave a significance impact on the well – being of an expectant mother[16].

Without doubt, major depressive disorder represents a major health problem for women of all nationalities [17]. Some women experience their first depressive episode during pregnancy whereas others with a history of depression are at increased risk for its recurrence, continuation or exacerbation [18, 19].

Postnatal depression may interfere with the normal mother infant relationship and may be associated with excess risk of disturbance in the cognitive and emotional development of the child [7]. Risk factor include stressful life events, marital conflict, infantile colic and lack of social support, as all as low income, low education and previous history of depression and the presence of physical and the presence of physical symptoms [6, 7, 20].

Self – reported maternal mood symptoms during pregnancy have been associated with poor birth outcomes, including low birth weight, increased risk of premature delivery and preeclampsia in the mother [21, 22] as well as with impaired health functioning for the mother [23]. Antenatal mood symptoms often predate postpartum depression [24] and mood difficulties in women with infants are associated with poor outcomes in their children [25].

Numerous prospective studies in both animal and humans indicate that high stress and mood disturbance during pregnancy are associated with a variety of negative maternal and infant outcomes [26], including low birth weight [27, 28], reduced duration of gestation and preterm birth [29, 30] bacterial vaginosis during pregnancy, increase risk for chromosomally normal spontaneous abortion, lower APGAR scores, smaller head circumference and neuro-endocrine dysregulation [31].

Zuckerman et al. found a significant association between maternal elevated center for epidemiological studies Depression (CES – D) scores during pregnancy and inconsolability and excessive crying in their infants [25].

The effect of postpartum depression can continue in to the infant's childhood. Three – year – old children whose mother's experienced postpartum depression were more likely to experience delayed language as well as physical health and behavioral problems [31].

Beginning in the first few months of life, maternal depression symptoms have been seen to affect responsiveness to the child, behavioral problems, and delayed cognitive and linguistic development [25].

Intervention aimed to prevent postnatal depression include psychotherapy, postnatal debriefing and other education and supportive measure provide by midwives, as well as antidepressant drugs, hormones, nutrition advice, ex- acupuncture and massage[32, 33, 34, 35].A recent study also found scores on a substance abuse screening associated with antenatal depression, as measure by Edinburgh Postnatal Depression Scale [36].Other data have shown a link between depression abuse, including smoking [37, 38].

Depression in pregnancy has been linked to lower education, unemployment, and marital status, particularly in lower – income women [39]. A prior history of depression is perhaps the strongest predictor of future depression [40]. The risk of postpartum depression in women who have history of depression is high, with estimates ranging from 25% to 50% [41].

A cochrane review has shown that exercise reduce depressive symptoms equally to traditional intervention, such as psychotherapy and pharmacological treatment [42]. Prospective epidemiological studies have shown those individuals who become or remain physically active are less likely to suffer clinical depression [43, 44, 45, 46].

Experimental and Meta – analytic studies also indicate that exercise training is an effective as antidepressant medication and psychotherapy [47].

Based on increasing evidence, of the positive effects of exercise are seen on improving symptoms of depression. It seems plausible that regular exercise may also be an effective intervention for the treatment of postnatal depression [48].

Although there have been advance in psychopharmacological and psychotherapeutic treatment for depression, many pregnant women do not seek treatment. A recent study of mental health issues in pregnancy found that only 1in 5 women with a psychiatric disorder in obstetrics setting had evidence of treatment in the medical charts [49]. Another investigation found that a diagnostic of depression was made in only 0.8% of childbearing women based on a reviewof diagnostic codes across a large hospital system [50].

Studies to date have not directly examined the utility of screening for antenatal depression in obstetrics settings for optimizing rates of identification and appropriate treatment [51].

Lack of physical activity has been associated with an increase in depression symptoms in many studies of non-pregnant women [52]. Several biological mechanisms have been proposed for this association. The rise in body temperature that follows physical activity also may cause a rise in temperaturefor specific regions of the brain , such as the brain stem , creating an overall feeling of relaxation[53].It is also possible that physical activity leads to an increase in brain neuro – transmitters such as serotonin, dopamine and norepinephrine, the availability of which is often decreased with depression [53].In addition, the large increase in estrogen and progesterone that occur during

pregnancy may influence neural structures known to be important in regulating mood [54].Increase sensitivity to changes in β- endorphins and dopamine and put pregnant women at on ever greater risk for experiencing depressive symptoms [55].

The Edinburgh postnatal depression scale is possibly the most widely used self- report measure for screening for postnatal depression in many countries [56]. The scale is used extensively in both clinical and research work [32]. The 10 – items Edinburgh Postnatal Depression Scale was chosen because it is relatively simple, short and takes less than 10 minutes to be filled up by respondents making it practical for use in busy postnatal wards and home visit [56].

Thompson et al. Compared 3 rating scales used previously in the diagnosis of the Postnatal Depression. The rating scales were Edinburgh Postnatal Depression Scale (EPDS), Hospital Anxiety and depression Scale (HADS), Hamilton Depression Rating Scale (HDRS). The performance Edinburgh Postnatal Depression Scale was found to be superior to that of Hospital Anxiety and depression Scale (HADS) in identifying RDC (Research Diagnostic criteria) –defined depression [57].

The empirically determined cut-off scores are applied when reporting on the rates of probable postnatal cases, or selection/referral of women for treatment for probable postnatal depression, or the course of the depression from the antenatal to the postnatal period [32].It is therefore important that the validated cut

– off scores are used to determine who is a 'high' or 'low' scores on this

measure. It is also important that the validated format is used when administering[32].

The 10 – question Edinburgh Postal Natal Depression Scale (EPDS) is a valuable and efficient way to identifying patient at risk for perinatal depression. The EPDS is an easy to administer and has proven to an effective screening tool.

[56]

SCRORING: -

- Maximum Score = 30
- Possible Depression = 10 or greater
- Always look for at items 10 (Suicidal thoughts)

Mother who scores above 13 is likely to be suffering from a depressive illness of varying severely[56].

Most studies showed a high – sensitivity of EPDS. Uncertainly about the comparability estimate of different EPDS version remain because of the difference in study design and large confidence intervals[58].

VALIDITY OF THE EPDS[58]: -

- Specificity: - 80% to 96%
- Sensitivity: - 96%

1.2 Research Question: -

- Is there any effect of exercise in postnatal depression?

1.3 Needs for Study: -

- To find out the level of depression percentage in postnatal women

1.4 Aims

Aims of Study: To find effect of the exercise in postnatal depression.

1.5. Objectives of the Study:-

1.5.1 (1) Primary Objective:

- To find effect of the exercise in postnatal depression.

1.5.2 (2) Secondary Objective

- To study whether prenatal exercise during pregnancy reduce the risk ofthe postnatal depression

1.6 Hypothesis:-

1.6.1 Null Hypothesis (N0)

- There is no Effect of the Exercise in postnatal depression.

1.6.2 Alternative Hypothesis (N1)

- There is a significant Effect of the Exercise in postnatal depression.

3.1 Source of Data:

- Surat

3.2 Study Design:

- Cross – Sectional Study

3.3 Sample Size:

- 50 Subjects

3.4 Study Population:

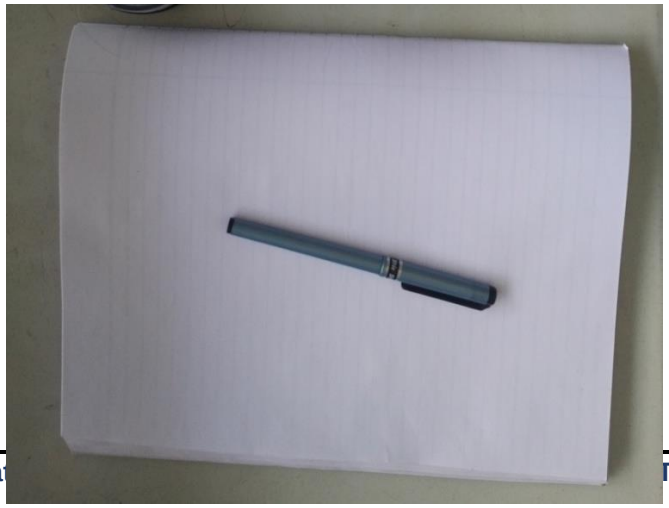
- Postnatal Female Aged between 21 – 30

3.5 Sampling Method:

- Convenient Sampling

3.6 Materials: -

- Pen
- Paper
- Edinburgh Postnatal Depression Questionnaire



3.7 Inclusion criteria: -

- Postpartum Female with the age between 21 to 30

3.8 Exclusion criteria: -

- Absence of other psychological or gynecological issues
- No previous history of depression

3.9 Outcome Measure:

- Edinburgh Postnatal Depression Scale Questionnaire

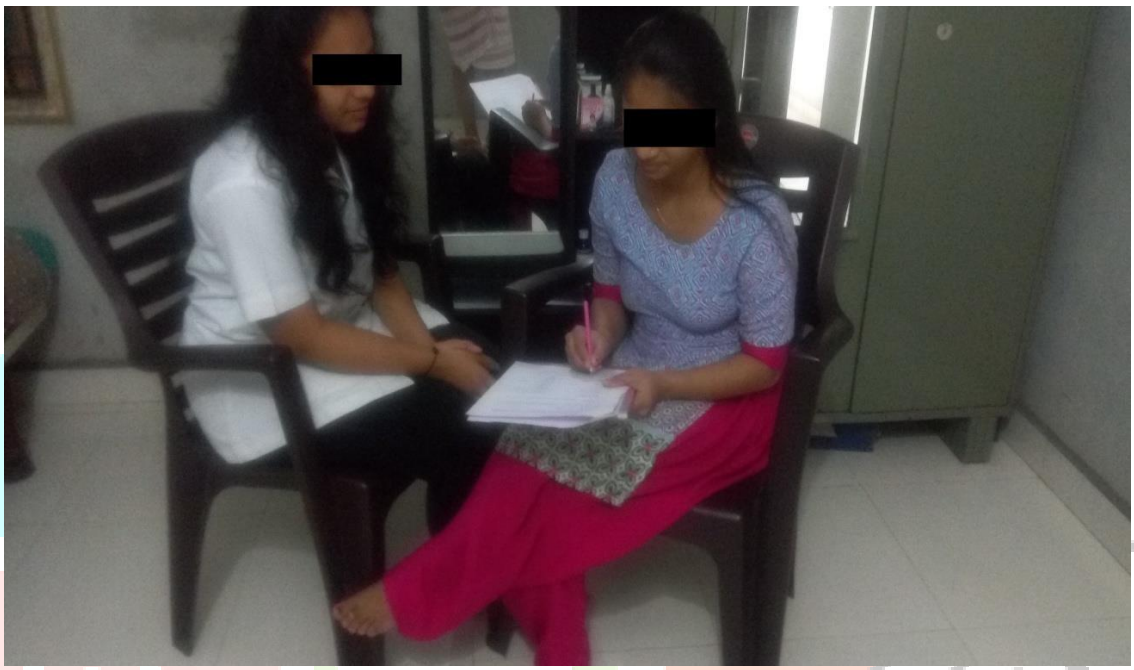
Scoring: Table 1

Maximum Score	30
Possible Depression	10 or greater
Always look for at items 10	Suicidal thoughts

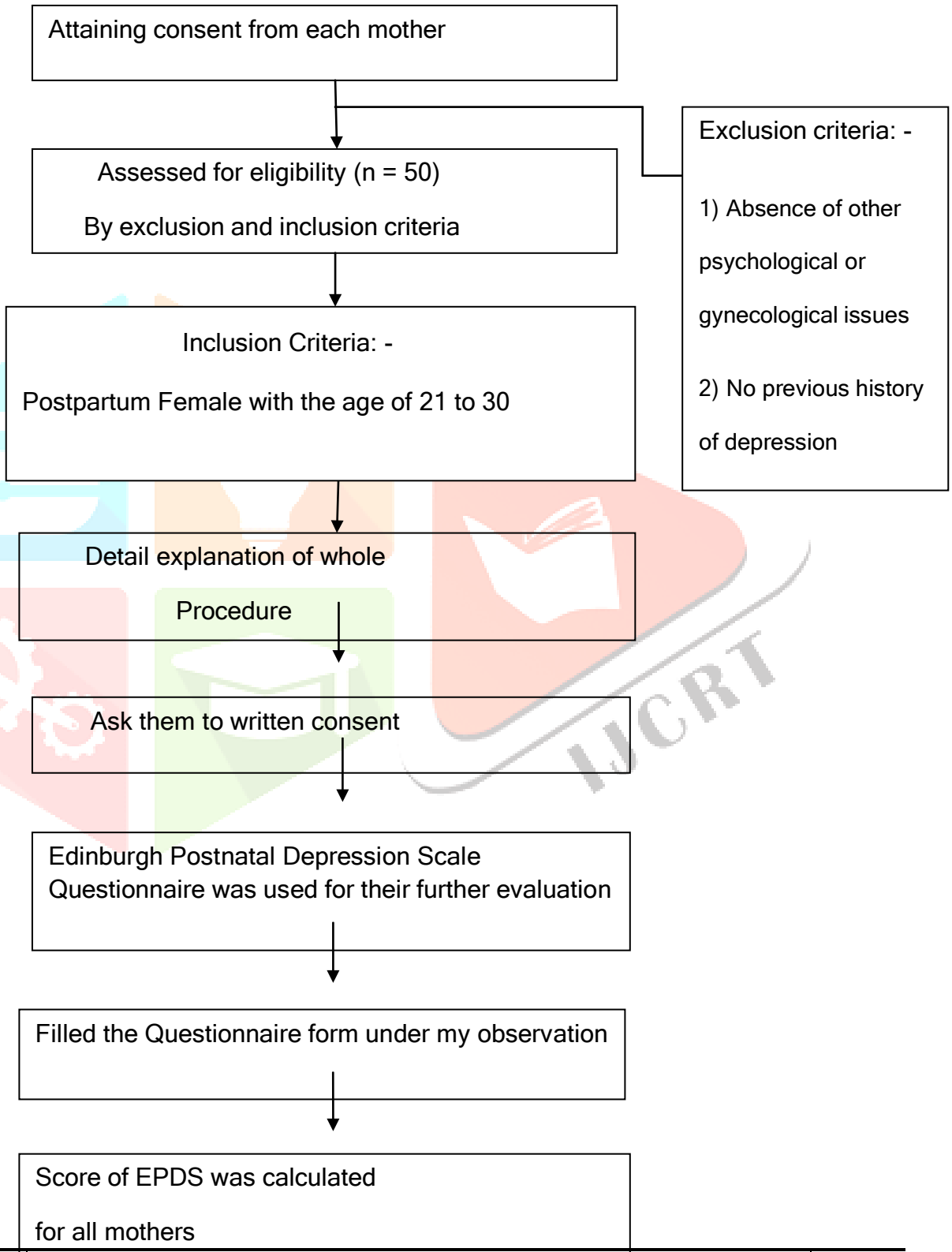
3.10 Procedure: -

- In Present study “Effects of exercises in Postnatal Depression in Surat” was initiated after attaining a permit by each sample and who were full filling the inclusion and exclusion criteria.
- A detailed explanation of the whole procedure was given to each mother and their willingness to the part of the study. They were asked to sign written consent before filling the EPDS score. And also translated version in Gujarati would be available for the comfort and understanding of the

mother. After that distribute it among the sample and ask to them to fill up all questionnaire under my observation. After collecting questionnaire from every participants final score of Edinburgh Postnatal Depression Scale was calculated.



3.10.1 Figure 1: Flow Chart of procedure



4.1 Statistical Analysis: -

- After collecting data, analysis was done to derive conclusion regarding theeffect of exercise on post-natal depression in Surat.
- The Edinburgh Postnatal Depression Scale was used for the analysis.
- Subjects were analyzed on the basis of EPDS score rate.
- Percentage method was used as a statistical tool to find out the effect ofexercise on postnatal depression in Surat.
- Statistical analysis was carried out using SPSS (version 16.0)

4.2 Demographic Data:

- Total 50 participants were screened for the study as per the inclusion andexclusion criteria.
- The mean value of mother age was 26.46 and the mode value is 26.
- The mean value of baby age was 6.75 and mode value is 5.
- The mean value of EPDS scores was±7.22, and the Maximum score was15, and mode value was 4.

4.2.1 Table 2: Illustrate the Demographic Data

Age	ampleSize	Mean	Median	Mode
Age of Mother	50	26.46	26	26
Age of Baby	50	6.72	6.5	5

4.2.2 Table 3: Illustrate the Clinical data of EPDs score among the participant

EPDS	ampleSize	Mean	inimumScore	Median	aximumScore	Mode
Result	50	7.22	2	7	15	4

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4.2.3 Table 4: Shows graphical representation of Percentage ofEdinburgh Postnatal depression score

EPDS Scores	No. Of Participants	Percentage
0 to 10	43	86%
10 to 30	7	14%

(Out of 50 Participants, 43 participants had a EPDS score in between 0 to10and other7participantshadascoreofbetween10to30)

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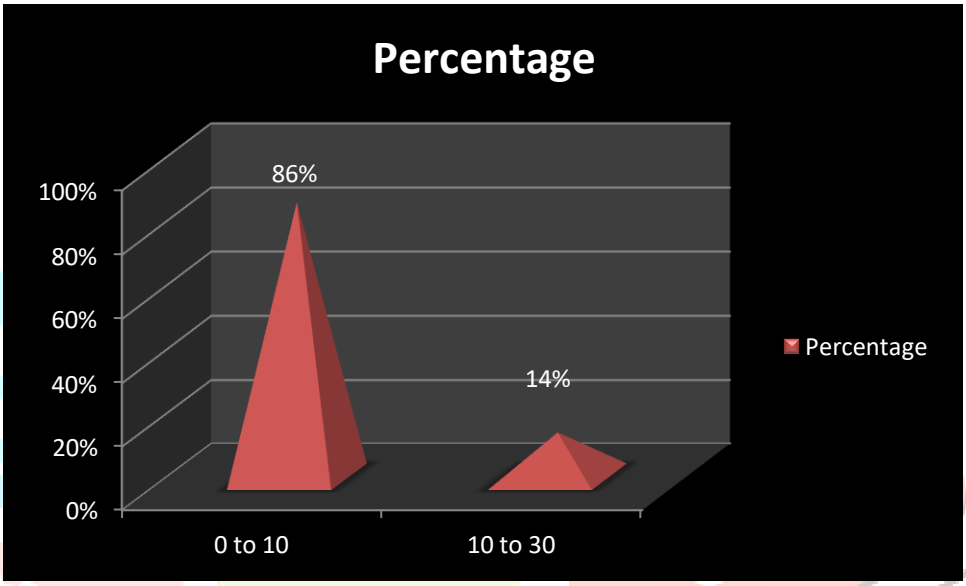
4.2.1 Figure2: Shows percentage of EPDS score among theparticipants



(The result shown that total 50 participants, among them Non – DepressedPostnatal patient was 86% and possible depressed Postnatal patient were 14%)

4.3 Result: -

- The result shows that,
- The result was analyzed by calculating the percentage.
- 43 participants had an EPDS score less than 10 that make 86% of nopostpartum depression.
- Only 7 participants had an EPDS score < 10 and that make 14% of facingpossible postpartum depression.

5.1 DISCUSSION

The present study was conducted to know the effect of exercise in postnatal depression. The sample size was 50. The outcome measure used was EPDS questionnaire. Result of this study shows that the significant effect of exercise in postnatal depression. The finding of this study showed that mother who did do prenatal exercise had low level of postnatal depression. 43 participants had an EPDS score less than 10 that make 86% of no postpartum depression. Only 7 participants had an EPDS score < 10 and that make 14% of facing postpartum depression.

In this study, the rate of depressed mother was less because of the normal walking; Home based exercises, socio- economic status and family support play crucial role in a person's wellbeing. Hence, more study like this are needed to confirm the situation in India similar to this.

Observational studies of risk factors for depression during pregnancy cannot determine causation. However, it is possible that some of the factors identified may enter in to a reinforcing cycle with depression. For Example, low level of physical activity, self – care ability, and antenatal support are associated with depression in pregnant women [67] (Demissie et al 2011)

A recent systematic review of the effect of exercise on antenatal depression found a small number of observational studies linking regular physical activity to improved self – esteem and reduce symptoms of anxiety and depression during pregnancy [68] (Shivakumar et al 2011)

Therefore, although it was not researched, it is likely that other factor in combination with improvements in fitness influenced improvements in depressive levels improve as a consequence of the physical activity [69]. Various theories included distraction from stress, alteration in brain monoamines and endorphin release [70].

Exercise also has emotional elements which depend on social and other environmental aspects, subject's expectations and other activities undertaken [71]. Other possible explanations include improvement in self- esteem and other distraction from negative thoughts [71].

A number of exercise intervention studies have demonstrated a reduction indepressive symptoms following exercise programs of various modes and duration [72]. Both high and low intensity aerobics exercise had significant improvements in depressive symptoms.

The long – term effect of exercise on quality of life in women after their pregnancy would be best evaluated if exercise were adopted by these individual as a lifestyle modification [42, 59](Brown et al 2000, Ramirez – Velez et al)

Physical activity before pregnancy, or both before and during pregnancy, decreased the odds of feeling depressed or "down" and experiencing little interest or pleasure in doing things, respectively.

Maternal well – being was better for women who maintained or increased physical activities from pre - pregnancy to postpartum (Blum et al., 2004).

In summary, our result suggests that a mindfulness – based intervention provide during pregnancy reduce negative affect and anxiety and holds promise for reducing depression and improving positive affect in a pregnant population.

It is possible that physical activity during pregnancy may be associated with reduce of postpartum depressive symptoms.

5.2 Clinical Implication:

- It is possible that physical activity before and during pregnancy may help ameliorate mood disorders in postpartum mothers.
- Thus, during a healthy pregnancy, health care providers may wish to encourage pregnant women to being or continue an exercise program for mental as well as physical reasons.

5.3 Limitation of this study:

- Firstly, the generalizability of the sample is a limitation of the research
- Secondly, the difficulty in recruiting participant provided many challengesand impacted on the sample size.
- Validation of the Gujarati version of EPDS was not present

5.4 Future scope for study:

- Large Sample Size
- Additional research is needed to examine how frequency or intensity of physical activity is related to postpartum depressive symptoms.
- It may also be important to examine how different types of physical activity (e.g. strength training, leisure time, and occupational activity) may impact women's postpartum depressive symptoms.

Chapter 6

Conclusion

6.1 Conclusion: -

- The mothers with lower EPDS scores were healthy by doing prenatal exercise without any depression compared to those who performed irregular exercises.
- It is concluded from this study that with respect to other countries around the world, mothers of Surat are less depressed due to family help and better socio economic support.
- Home – based exercise is a feasible non pharmacological intervention with the potential to alleviate postpartum depressive symptoms.
- It is hence observed that, Home - based exercise reduce the symptoms of Postnatal depression.

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