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AN OBSERVATIONAL PILOT STUDY TO ASSES THE RELATION BETWEEN PRAKRUTHI AND PRE- MENSTRUAL SYNDROME

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1. ABSTRACT

Background: PMS is a group of symptoms that occur in women, typically between ovulation & a period. The cause isn't fully understood but likely involves changes in hormones during the menstrual cycle. The *Prakruthi* (individuality) of the person & symptoms of PMS may interlink. **Objectives:** In this study, assessment was done for the involvement of *Prakruthi* & its severity in PMS & also the relation between PMS. **Materials & Method:** Data of 21 samples were collected by using Standard Questionnaire of *Prakruthi* & PMS. Obtained data was analyzed & interpreted by using statistical software using tests like applying Kruskal-wallis one way test and Spearman's two way correlation tests. **Results and Conclusion:** The analysis of total score of PMS of different *Prakruthi* revealed that *Kapha Pradhana Prakruthi* individuals were having more symptoms of PMS. The data analysis revealed a statistical significant relationship among the PMS symptoms example positive co-relation between weight gain and menstrual cramps, nervous tension and fluid retention, bloating and backache etc. But there is no statistical significant relation between individual *Prakruthi* & Severity of

PMS. Hence the study paves way for analysis in larger sample size, which may provide conclusive results regarding symptomatic associations and its relation with *Prakruti*.

KEYWORDS: *Prakruthi*, *Ayurveda*, Pre-menstrual syndrome, Menstruation, Observational study, *Dosha*, Hormones.

2. INTRODUCTION

Prakruthi is one of the absolute principles explained in Ayurveda. It plays an important role in the selection and establishment of every factor for which person is going to interact from conception till death, e.g. life style, diet planning etc. *Prakruthi* stands for nature of the body in terms of *Dosha* & is decided at the time of conception according to predominance of *Dosha*. It is responsible for physical & mental characteristics of an individual and decides the status of health. It is clearly indicated in texts that lifestyle & various activities should be planned as per *Prakruthi* for maintenance of health.[1]

Premenstrual Syndrome (PMS) refers to complex of cyclical & recurrent physical, emotional & behavioral symptoms that occur specially in luteal phase & remain for minimum three consecutive menstrual cycles. Up to 80% of women of child bearing age report with few to mild symptoms of PMS prior menstruation. It is very common & more than 10 million cases are reported per year in India.[2]

PMS individual may experience symptoms of varying duration & severity from cycle to cycle. However in about 2.5 to 3% of women, the syndrome is severe enough to affect their activities and social communications. The exact cause of PMS remains unknown, however natural fluctuations in hormonal levels like Pre-existing serotonin deficiency with increased progesterone sensitivity is considered responsible for this disorder.[2]

In current science there are evidences connecting the concept of *Prakruthi* with metabolic pathways and diseases. This study was conducted to consolidate the evidence of such associations which exist between *Prakruthi* and PMS including it's severity.

3. MATERIALS AND METHODS

Source of data: Subjects were selected from Alva's Ayurveda Medical College, Moodbidri.

Method of collection of data: A)Sample size : 21 subjects fulfilling the inclusion criteria was selected randomly for the study.

B) Inclusion criteria: - Subjects with PMS

- Subjects of age between 16- 35 years

C) exclusion criteria: - Pregnant & lactating females

- Subjects with systemic illness

Study design: It is an observational study where subjects were selected randomly. The study was undertaken by using standard PMS questionnaire[3] and Standard *Prakruthi* assessment questionnaire *(Kishore Pathwardhan)*[4] which was sent through google forms.

The data was collected from 21 participants of PMS sufferers, by using standard questionnaire having 46 questions with scorings (none=o, mild=1, moderate=2,severe=3) and later, the same participants were given *Prakruthi* assessment questionnaire.

Data was analyzed by grading viz. (weak before period =1, weak after period=2 & others=3). Kruskal-wallis one way test was used to assess relation & severity of *Prakruthi* & PMS, while Spearman's two way correlation tests was used to assess the relation between PMS using Graph pad prism software. The major findings were classified into different categories and are presented in tables, figures and description below.

4. RESULTS AND OBSERVATION

Majority of the subjects had *Kapha Pradhana Prakruti* (57%) (Table 1). The age group of these 21 subjects were between 22- 33 years and weight of subjects ranged from 43-67kg with an average of 55kg. Majority of symptoms like anxiety, irritability, mood swings, reduced appetite, headache, fatigue, breast tenderness, acne, weakness and radiating pain towards thighs was present week before periods in most of the subjects of the study.

Table. No. 01

Prakrithi		
Vata Pradhana	***Pitta Pradhana***	***Kapha Pradhana***
6	3	12

Symptoms its % observation

Table. No. 02

Anxiety(out of 15 patients)		
Mild	**Moderate**	**Severe**
40%	53%	7%

Table. No. 03.

Irritability(out of 20 patients) Out of 19 responses 82.4% were having week before periods.		
Mild	**Moderate**	**Severe**
20%	55%	25%

Table. No. 04

Mood swings (out of 20 patients) Out of 20 responses 70% were having week before periods		
Mild	**Moderate**	**Severe**
30%	40%	30%

Table. No. 05

Appetite (Out of 12 responses) Out of 11 responses 54.5% were having week before periods		
Mild	**Moderate**	**Severe**
58.3%	33.3%	8.3%

Table. No. 06.

Headache (Out of 11 responses) Out of 11 responses 63.6% were having week before periods, 9.1% were having week after periods.		
Mild	Moderate	Severe
72.7%	18.2%	9.1%

Table. No. 07.

Fatigue (out of 17 responses) Out of 17 responses 70.6% were having week before periods, 11.8% were having week after periods.		
Mild	**Moderate**	**Severe**
64.7%	29.4%	5.9%

Table. No. 08

Breast tenderness (out of 14 responses) Out of 14 responses 85.7% were having week before periods.		
Mild	**Moderate**	**Severe**
71.4%	21.4%	7.1%

Table. No. 09

Oily skin(out of 15 responses) Out of 14 responses 42.9% were other than duration of menstruation.		
Mild	**Moderate**	**Severe**
53.3%	26.7%	20%

Table. No. 10

Acne(out of 21 responses) Out of 20 responses 85% were week before periods.		
Mild	**Moderate**	**Severe**
76.2%	9.5%	14.3%

Table. No. 11

Menstrual cramps(out of 19 responses) Out of 18 responses 50% were other than duration of menstruation.		
Mild	**Moderate**	**Severe**
31.6%	47.4%	21%

Table. No. 12

Menstrual backache(out of 19 responses) Out of 18 responses 44% were other than duration of menstruation.		
Mild	**Moderate**	**Severe**
47.4%	42.1%	10.5%

Out of 8 responses for constipation 62.5% mild i.e. week before periods.

Out of 8 responses for constipation 75% mild in that 42.9% week before periods.

Spearman correlation tests

Table. No. 13.

SL.NO	Symptoms	P value	Significance	Correalation Test
1	Anxiety V/s Nervous tension	0.0016	S **(P <0.05)	0.6436
2	Irritability V/s Mood swings	0.0003	S***(P <0.05)	0.7094
3	Irritability V/s Nervous tension	0.0079	S** (P <0.05)	0.5627
4	Irritability V/s Fatigue	0.0206	S* (P <0.05)	0.5012
5	Irritability V/s backache	0.0301	S* (P <0.05)	0.4736
6	Irritability V/s Weakness and radiation down thighs	0.0112	S* (P <0.05)	0.5417
7	Irritability V/s Menstrual cramps	0.0065	S** (P <0.05)	0.5739
8	Mood swings V/s Nervous tension	0.0276	S* (P <0.05)	0.4802
9	Mood swings V/s Menstrual cramps	0.0346	S* (P <0.05)	0.4630
10	Nervous tension V/s Fluid retention	0.0361	S*(P <0.05)	0.4596
11	Nervous tension V/s Fatigue	0.0158	S*(P <0.05)	0.5195
12	Nervous tension V/s Palpitations	0.0187	S*(P <0.05)	0.5081
13	Nervous tension V/s Weakness and radiation down thighs	0.0008	S*** (P <0.05)	0.6751
14	Appetite increase V/s Headache	0.0045	S** (P <0.05)	0.5943
15	Appetite increase V/s Constipation	0.0121	S* (P <0.05)	0.5370
16	Headache V/s Dizziness or Fainting	0.0338	S* (P <0.05)	0.4648
17	Headache V/s Diarrhea	0.0018	S** (P <0.05)	0.6396
18	headache V/s Weakness and radiation down thighs	0.0447	S* (P <0.05)	0.4422

19	Palpitations V/s Fluid retention	0.0006	S*** (P <0.05)	0.6852
20	Palpitations V/s Weakness and radiation down thighs	0.0008	S*** (P <0.05)	0.6740
21	Palpitations V/s Menstrual cramps	0.0070	S** (P <0.05)	0.5695
22	Fatigue V/s Dizziness or fainting	0.0379	S* (P <0.05)	0.4557
23	Fatigue V/s Weakness and radiation down thighs	0.0003	S*** (P <0.05)	0.7152
24	Fatigue V/s Menstrual cramps	0.0162	S* (P <0.05)	0.5179
25	Fluid retention V/s Swollen extremities	0.0016	S** (P <0.05)	0.6455
26	Fluid retention V/s Weakness and radiation down thighs	0.0161	S* (P <0.05)	0.5181
27	Fluid retention V/s Menstrual cramps	0.0356	S* (P <0.05)	0.4607
28	Weight gain V/s Weakness and radiation down thighs	0.0037	S** (P <0.05)	0.6048
29	Weight gain V/s Menstrual cramps	0.0288	S* (P <0.05)	0.4769
30	Breast tenderness V/s Menstrual cramps	0.0228	S* (P <0.05)	0.4940
31	Abdominal blotting V/s Backache	0.0227	S* (P <0.05)	0.4945
32	Acne V/s Oily skin	0.0128	S* (P <0.05)	0.5334
33	Backache V/s Menstrual backache	0.0068	S** (P <0.05)	0.5717
34	Weakness and radiation down thighs V/s Menstrual cramps	0.0110	S* (P <0.05)	0.5431

5. DISCUSSION

Backache having significant relation with *Prakruthi*, while taking average of all responses of *Prakruthi Kapha Pradhana Prakruthi* shows more severity of backache this may be due to lack of physical activity like prolonged sitting & lying down and also more samples of *Kapha Pradhana Prakruthi* were seen in this study. *Kapha* is related to the hormonal component of the body and hence this also could be a reason for the increased symptoms of PMS in *Kapha Pradhana Prakruti.*

While correlating the symptoms with each other anxiety, mood swings & irritability with nervous tension shows significant correlation this may due to if person feels anxiety during periods it will lead to increase of BP alertness etc. leading nervousness.[5] Irritability and mood swings also shows significant correlation this may due to person having mood swings may quickly switch from feeling happy and feeling sad.

Mood swings and menstrual cramps also shows significant correlation may be due increase in levels of estrogen and progesterone during periods.[6]

Nervous tension and fatigue also shows significant correlation may due to adrenal fatigue comes from stress and anxiety will lead to nervous tension.[7] Appetite increase and headache shows significant correlation may due to when appetite increase our body releases hormones that signals our brain that you hungry this same hormones may increase our BP & tighten blood vessels in our body triggering headache.[8] Palpitation and menstrual cramps shows

significant correlation this may due to rapid & skipping heart beat during the periods due to hormonal changes (thyroid).[9]

Fatigue and Menstrual cramps also shows significant correlation this may due to heavy menstrual bleeding often causes women to feel tired, which is normal due to decrease in oestrogen levels which occurs around this point in our cycle.[10] Breast tenderness and Menstrual cramps also shows significant correlation this may due to changes in hormonal levels during periods leads occurring both symptoms together.[11] Abdominal blotting and Backache also shows significant correlation this may due to radiating pain towards back & abdomen which is present during periods will create unusual sensations such as bloating of abdomen.[12]

Acne and Oily skin shows significant correlation this may due to oily skin can clog the pores and lead to increases acne, this due to estrogen & progesterone level drop before periods can trigger our sebaceous glands to secrete more sebum which lubricates skin.[13] Backache and Menstrual backache shows significant correlation this may due to excess of prostaglandins causes painful menstruation, heavy contraction can lead to low back pain.[14] Weakness & radiation down thighs and Menstrual cramps also shows significant correlation this may due to dehydration and loss of blood during periods leads to weakness & increase the levels of prostaglandins cause more pain, this contraction cause pain in lower back that radiates down the legs.[15]

6. CONCLUSION

This study basically deals with PMS & *Prakruthi*. A realationship is established between *Prakruthi* & PMS. According to the results & observation there is no statistical significance in relation between individual *Prakruthi* & Severity of PMS. There was statistical significant relevance of backache among 3 prakruthi. By these score *Kapha Pradhana* having more severity of symptoms of PMS, these may due to less sample size of diffent *Prakruthi.*

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