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### **Comparative Study of Pre Menstrual Syndrome in Sports Women and Non-Sports Women of different age group**

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#### **ABSTRACT:**

Participation in sports means regular exercise, involvement in physical activity, is a very important habit which helps in maintaining good health.

The purpose of the study was to observe whether sports women and non sports women differ in Pre Menstrual Syndrome(PMS).

In order to compare PMS in sports women & non sports women of Chhattisgarh total 240 women of different age group (25-45 years) were selected. The subjects were assessed for PMS through a structured questionnaire.

PMS assessed through the questionnaire indicated that the mean value obtained for PMS as a whole was higher for NSW as compared to SW, comparative study showed statistical significant difference. When analyzes sub-variables wise it was noted that the two group differed significantly in physical and behavioural symptoms of PMS, higher mean values recorded for NSW. Further age group wise analysis showed statistically significant difference in total PMS in all the age groups accept 25-30 yrs.

NSW showed higher mean values in over all PMS problems as well as in sub variables of PMS that is physical, psychological and behavioral symptoms.

**KEY WORDS :** Pre Menstrual Syndrome, Sports Women and Non-Sports Women.

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## **INTRODUCTION**

PMS is a psychosomatic problem occur in the late luteal phase of MC, and the symptoms are expressed in physical psychological and behavioral changes, most of the women face this problem<sup>1,2,3,4</sup>. The discomfort accompanied by PMS affects quality of life of women<sup>5,6</sup>.

The cause of PMS is not fully understood, but is generally attributed to sex hormone fluctuations estrogen and progesterone, increased prostaglandin an inflammatory substance & prolactin age genetics and vitamins and mineral deficiency<sup>7,8</sup>. Deficiency in serotonin has also been identified as reason for PMS. Research has also shown that low serotonin levels are associated with many of the symptoms of PMS, including irritability, sadness, and increased craving for carbohydrates. Therefore, it is theorized that relief of PMS symptoms may be obtained through increasing serotonin levels<sup>5</sup>.

PMS is not known by a single name in Ayurveda so according to its symptoms and phase of occurrence of symptoms, the disease can be related to Pittavritta Vyana Vata. Though an effective cause and so the effective treatment has not yet been found for PMS in Modern Medicine, Ayurveda can offer a great benefit to the female population by improving her psychosocial as well as physical health which ultimately contributes to a healthy society<sup>9</sup>.

In order to study PMS (Pre-menstrual syndrome): of sports women & non sports women of Chhattisgarh total 240 women were selected from different cities, Raipur, Durg, Bilhail, Bagbahara, Mahasmand, Rajnadgaon, and Bilaspur of Chhattisgarh. Out of 240 women subjects, 120 were sports women (SW) who participated in different competition, at state, national and university level, & non sports women (NSW) who never participated in any competition or physical education program. Srivastava P, Varoda A & Venugopal R (2016) in a study reported indicate that adolescent girls experience menstrual problems. The natures of menstrual problems are different<sup>10</sup>. Janghel, Srivastava & Venugopal (2016) in a study reported sub scales of pre-menstrual screening scale physical, psychological and behavioral are positively significant dimensions of the scale<sup>11</sup>.

## **METHOD**

The subjects were categorized in four different age groups, the age groups were 25-30 years, 30-35 years, 35-40 years and 40-45 years. Each age group consisted of at least 30 subjects. For collecting information on PMS check list was prepared and was used.

**RESULT & DISCUSSION**

Mean values of of PMS in SW and NSW of different age groups are presented in table 1.

**Table 1: Mean ± SE, SD & t-test of pre menstrual syndrome of SW & NSW**

Age	Group	Physical		Psychological		Behavioural		Total	
		Mean±SE	SD	Mean±SE	SD	Mean±SE	SD	Mean±SE	SD
25-30	SW	3.52±.13	.87	2.23±.11	.74	2.63±.08	.5	8.36±.22	1.44
	NSW	3.68±.16	.88	2.71±.16	.87	2.62±.12	.62	9±.31	1.7
	T	.82 (.42)		2.65(.01)		.08(.95)		1.79(.08)	
30-35	SW	2.57±.15	.82	1.24±.08	.44	1.4±.1	.5	5.2±.21	1.13
	NSW	4.6±.21	1.11	3.87±.17	.9	3.04±.17	.93	11.5±.37	2
	T	8.12 (.01)		14.47 (.01)		8.5(.01)		15.06 (.01)	
35-40	SW	2.65±.09	.49	3.13±.16	.89	1.59±.13	.68	7.36±.25	1.36
	NSW	6.49±.16	.91	4.04±.25	1.39	4.85±.28	1.59	15.37±.42	2.4
	T	20.94 (.01)		3.09 (.01)		10.63 (.01)		16.32 (.01)	
40-45	SW	3.1±.16	.88	1.97±.1	.53	2.1±.11	.58	7.16±.24	1.35
	NSW	5.36±.22	1.18	3.23±.25	1.36	2.52±.2	1.07	11.1±.37	2.01
	T	8.79 (.01)		4.93 (.01)		2.01 (.05)		9.29 (.01)	
Total	SW	3.02±.08	.88	2.16±.08	.93	2±.07	.75	7.17±.15	1.75
	NSW	5.08±.84	1.45	3.48±.9	1.26	3.3±1.04	1.47	11.84±.28	3.08
	T	16.28(.01)		10.56(.01)		9.79 (.01)		15.36(.01)	

Result of age group 25-30 years showed significant difference(t[28] 2.65 p=0.01) between SW (M=2.23& SD=.74) NSW(M=2.71& SD=.87)in psychological symptoms of PMS was. Non significant difference was observed in physical ,behavioral and overall symptoms of PMS between SW and NSW, in this age group.

In the age group 30-35 significant difference was recorded in physical symptoms of PMS (t[28] 8.12 p=0.01) between SW (M=2.57& SD=.82) NSW (M=4.6& SD=.1.11),psychological symptoms of PMS (t[28] 14.47 p=0.01) between SW (M=1.24& SD=.44) NSW (M=3.87& SD=.9)and behavioral symptoms of PMS (t[28] 8.5 p=0.01) between SW (M=1.4& SD=.5) NSW (M=3.04 & SD=.93), significant difference in overall symptoms of PMS (t[28] 15.06 p=0.01) between SW (M=5.2 & SD=.1.13) NSW (M=11.5 & SD=2) was also recorded.

Similarly in the age group 35-40 significant difference was recorded in physical symptoms of PMS ( $t[28] 20.94 p=0.01$ ) between SW ( $M=2.65$  &  $SD=.49$ ) NSW ( $M=6.49$  &  $SD=.91$ ), psychological symptoms of PMS ( $t[28] 3.09 p=0.01$ ) between SW ( $M=3.13$  &  $SD=.89$ ) NSW ( $M=4.04$  &  $SD=1.39$ ), and behavioral symptoms of PMS ( $t[28] 10.63 p=0.01$ ) between SW ( $M=1.59$  &  $SD=.68$ ) NSW ( $M=4.85$  &  $SD=1.59$ ), and overall symptoms of PMS ( $t[28] 16.32 p=0.01$ ) between SW ( $M=7.36$  &  $SD=1.36$ ) NSW ( $M=15.37$  &  $SD=2.4$ ).

In the age group 40-45 significant difference was recorded in physical symptoms of PMS ( $t[28] 8.79 p=0.01$ ) between SW ( $M=3.1$  &  $SD=.88$ ) NSW ( $M=5.36$  &  $SD=1.18$ ), psychological symptoms of PMS ( $t[28] 4.93 p=0.01$ ) between SW ( $M=1.97$  &  $SD=.53$ ) NSW ( $M=3.23$  &  $SD=1.36$ ), and behavioral symptoms of PMS ( $t[28] 2.01 p=0.01$ ) between SW ( $M=2.1$  &  $SD=.58$ ) NSW ( $M=2.52$  &  $SD=1.07$ ), and overall symptoms of PMS ( $t[28] 9.29 p=0.01$ ) between SW ( $M=7.16$  &  $SD=1.35$ ) NSW ( $M=11.1$  &  $SD=2.01$ ).

Physical symptoms of PMS was ( $M=3.02$   $SD=.88$ ) lower in SW than NSW ( $M=5.08$  &  $SD=1.45$ ). There was statistically significance difference recorded between SW & NSW ( $t[238]16.28 p=0.01$ ). The NSW showed higher physical symptoms as compare to SW. Similarly psychological symptoms of PMS in SW ( $M=2.16$  &  $SD=.93$ ) was lower as compared to NSW ( $M=3.48$  &  $SD=1.26$ ), the two groups differed significantly ( $t[238]10.56 p=0.01$ ). Behavioral symptoms of PMS showed mean of 2.0 and  $SD=0.75$  in SW and mean of 3.30 and  $SD=1.47$  in NSW. Comparative statistics shows significant difference between the two group ( $t[238]9.79 p=0.01$ ). Over all PMS problem exhibited significant difference ( $t[238]15.36 p=0.01$ ) between SW ( $M=7.17$  &  $SD=15.36$ ) NSW ( $M=11.84$  &  $SD=3.08$ ).

PMS assessed through the questionnaire indicated that the mean value obtained for PMS as a whole was higher for NSW as compared to SW, comparative study showed statistical significant difference between SW and NSW. When analyzes sub-variables wise it was noted that the two group differed significantly in physical and behavioural symptoms of PMS, higher mean values recorded for NSW.

Statistically significant difference was observed between SW and NSW of all age groups ( $p<0.01$ ) except 25-30 years. When the data was analyzed sub variable wise it was found that the SW and NSW significantly differed in physical, psychological and behavior symptoms of PMS ( $p<0.01$ ), NSW showed higher mean values which denotes more problems in NSW than SW except in the age group 25-30 which showed significant difference only in psychological sub variable.

The prevalence of PMS was found to be lower in swimmers. Aganoff *et al* 1994<sup>12</sup>. surveyed exercisers and non-exercisers to determine the effects of regular, moderate exercise on mood and menstrual cycle symptoms. Regular exercisers obtained significantly lower scores on impaired concentration, negative affect, behavior change, and pain compared to control. Safarzaden *et al* 2016<sup>13</sup> in a study reported regular exercise and continuous sports can be effective in preventing PMS. Sympathetic nerve in uterine muscle causes pain in PMS Dawood 2006<sup>14</sup>. Involvement in exercise for longer duration causes decrease in sympathetic nerve activity which reduces PMS Hagey & Warren 2008<sup>15</sup>. Sports activities caused endorphin beta level to increase Kraemer, 2007, Serena & Khalel, 2007, Daley, 2009, Rapkin 2003, Lustyk & Weidmen 2004<sup>16,17,18,19,20</sup>. Samadi, Taghian and Valiani 2013<sup>21</sup> in a study reported significant difference in PMS physical and psychological scores which reduced after 8 weeks regular aerobic exercise in non-athlete. Similar result was reported by Degghani, Emami & Ghamkhar 2008<sup>22</sup> who reported 3 months aerobic training reduced physical and psychological symptoms of PMS. Kroll-Desrosiers *et al* 2017<sup>23</sup> Physical activity was not significantly associated with total, affective, or physical premenstrual symptom score. Has been Premenstrual syndrome (PMS) begins during the fertility years and ceases at menopause. This syndrome manifest itself during later stage in every monthly period in the form of complex of physical psychological and behavioral symptoms. About 90% women experience this syndrome. The syndrome is accompanied by pain. Physical activity induces endorphins which influence feeling of pain. More studies on relationship between menstrual disorders and physical activity should be focused so that the larger female population is benefitted.

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