

**EFFECT OF MODIFIED TRADITIONAL
MEDICINE FORMULATION-16
(APUNYEIN-THWAY-HSEI) IN THE
TREATMENT OF *RAJONIVRUTI*
(MENOPAUSAL SYNDROME)**

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Introduction

- Menopause is an important epoch in the life of a female.
- With increasing life expectancy among women in developing countries, the prevalence of osteoporosis, cardiovascular disease and problems of postmenopausal women continue to increase substantially.

{Ref: WHO Report on Menopause (1996)}

➤ In Ayurvedic practice, menopause is the transition from *Pitta* dominated period to *Vata* dominated period that causes the menopausal symptoms (Bhagyashri *et al.*, 2012).

- Modified TMF-16 has been prescribed in menopausal symptoms since 1980 by U Kyaw Sein, a member of Traditional Medical Council.
- Based on the experience of that physician, Myanmar traditional practitioners have been using modified TMF-16 in the management of menopausal symptoms.

➤ This study aimed to determine the effect of modified TMF-16 in the management of menopausal syndrome.

Objectives

- To determine the relationship between *Rajonivruti* (menopausal syndrome) and *Prakriti* (constitution)
- To determine the effect of modified TMF-16 in the treatment of *Rajonivruti* (menopausal syndrome)
- To explore the relationship between *Prakriti* (constitution) with serum FSH level

Materials and Method

➤ **Study Design**

Quasi experimental study

➤ **Study Area**

Out Patient Department, Traditional Medicine

Teaching Hospital, Mandalay.

➤ **Study Population**

Thirty Three (33) subjects from OPD, MTMH

➤ **Study Period**

One year (1st September 2013 to 31st October 2014)

Inclusion Criteria

- Age : More than 40 years
- History of amenorrhoea for not less than 6 months
- CCRAS Menopausal Syndrome Score ≥ 10
- Serum FSH level $> 25\text{mIU/ml}$

Exclusion Criteria

- Surgical menopause
- Patient with mental disorder
- Patient with moderate and severe hypertension (160 mmHg above/110 mmHg above)
- History of taking Hormone Replacement Therapy (HRT)
- Taking the drugs with the possible effect on the reproductive hormones level
- Any malignant disorders

Assessment Criteria for the improvement

Clinical symptom	1	2	3	4
Hot flushes	Not at all	1-2 times/day	3-5 times/day	More than 5 times/day
Night sweating	Not at all	1-2 times/day	3-5 times/day	More than 5 times/day
Insomnia	Not at all	< 2 times/week	2-3 times/week	Disturb routine work
Muscle/joint pain	No muscle/joint pain	Sometime for 5-10 mins	Daily for 30-60 mins	Daily for more than 1 hour
Irritability	No irritability	Worrying about minor matters	Apprehensive attitude apparent in speech	Fear and anxiety expressed without questioning
Dryness/itching in vagina	Not at all	Sometimes	Symptom revealed on enquire	Symptom express spontaneously
Feeling tiredness	No tiredness	A little tired	Tiredness on exercise	Tiredness at rest
Palpitation	No palpitation	Awareness of heart beat in sometime	Awareness of heart beat in daily activity	Awareness of heart beat in rest

CCRAS menopausal syndrome score

Symptoms	Score
➤ Hot flushes	5
➤ Night sweating	5
➤ Insomnia	3
➤ Muscle/joint pain	3
➤ Irritability	3
➤ Dryness/itching in vagina	3
➤ Palpitation	2
➤ Feeling tiredness	1

Sample Size Calculation

➤ Sample size calculation and sampling method was done as followings.

➤ Sample size calculation by Epi info version 6.4

Population Size - 50

Expected Frequency - 50.00%

Worse Acceptable - 40.00%

Power - 80%

p value - 0.05 (95% confident interval)

Require sample size - 33



Figure 1. Ingredients of Modified TMF-16

No.	Myanmar Name	Scientific Name	Weight (Myanmar)		Metric	Amount in g per	Part used
			Kyat	Pe			
1	ကတ္တရသချွေ	Rhus secedaenea	-	8	8	1.4	Leave gall
2	ကျွဲသွေး	Babulus babulus	-	8	8	1.4	Animal product
3	ကုံကော်ဝတ်ဆံ	Mesua ferrea.L	5	-	80	14.1	Stigma
4	ချောင်းချား	Unidentified	-	8	8	1.4	Stem
5	စေးမခန်း	Jastrophia multifida.L	-	8	8	1.4	Stem
6	ဆေးပုဇွန်ထုပ်	Unidentified	-	8	8	1.4	Rhizome
7	ဇာတိပျိုလ်သီး	Myristica fragrans	-	8	8	1.4	Fruit
8	ဇီယာ	Cuminum cyminum	-	8	8	1.4	Fruit
9	ဒန္တတူးဖြူ	Unidentified	-	8	8	1.4	Wood
10	ဒန္တတူးနီ	Soymida febrifuga	4	8	72	12.7	Wood
11	နံ့သာဖြူ	Santalum album.L	4	8	72	12.7	Wood
12	နံ့သာနီ	Pterocarpus santalinus.L	5	-	80	14.1	Wood
13	နွယ်ချို	Glycyrrhiza glabra.L	5	-	80	14.1	Stem
14	ပန်းမ	Anneslea fragrans	-	8	8	1.4	Bark
15	ပန်းနု	Saussurea sp.	-	8	8	1.4	Root
16	ဖာလာကြီး	Elettaria cardamomum	-	8	8	1.4	Seed
17	ရိုးတုံ	Unidentified	-	8	8	1.4	Stem
18	လေးညှင်း	Syzygium aromaticum.L	-	8	8	1.4	Flower
19	သကြားခဲ	Sugar	-	8	8	1.4	
20	ဇေတ်သာ	Amonium chloride	5	-	80	14.1	

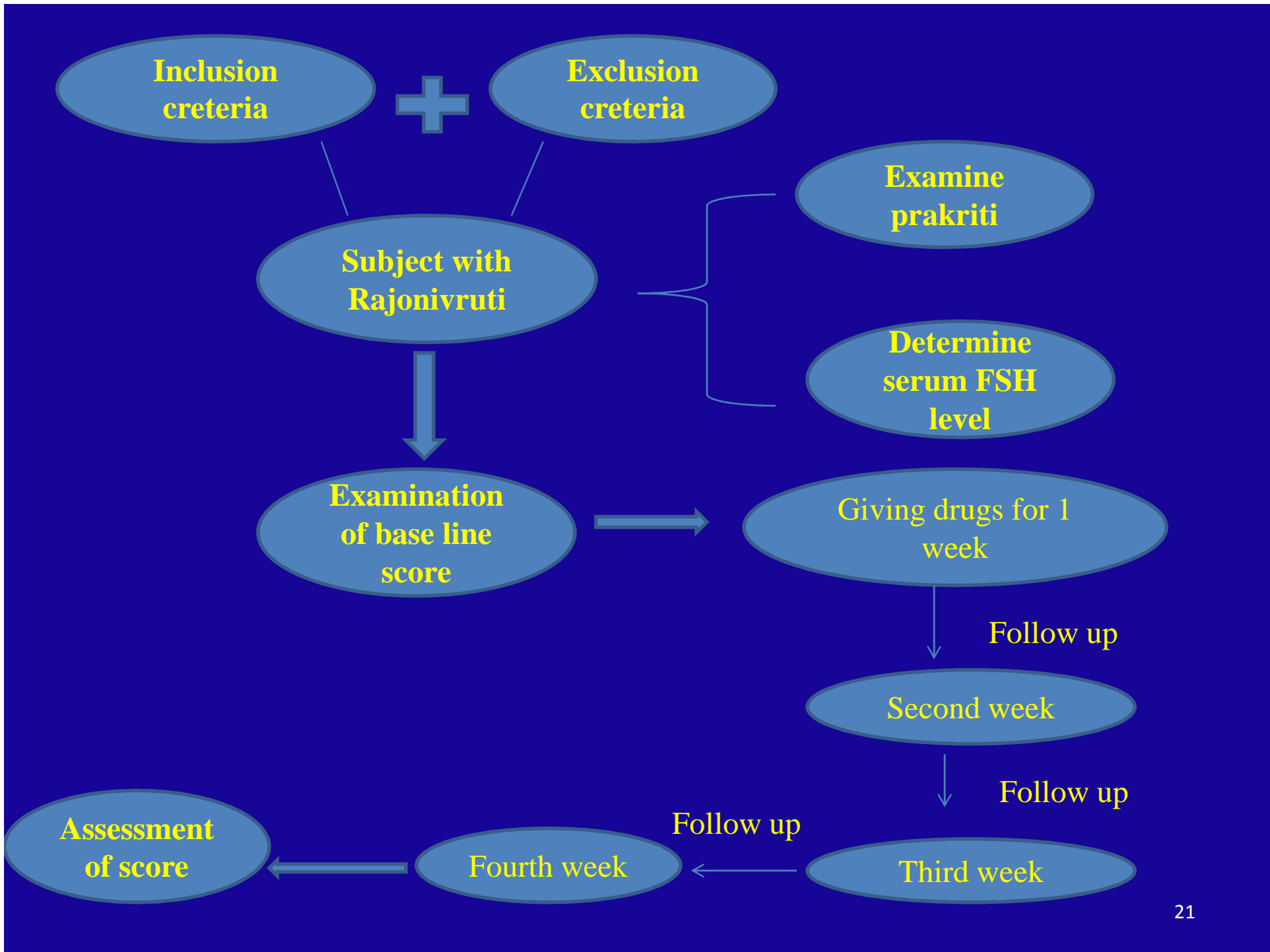
Detail Procedure

- During study period the subjects who fulfill including criteria and exclusion criteria were recruited from outpatient department at Mandalay, TMTH.
- All patients with *Rajonivruti* were personally interviewed and examined for *Prakriti* with closed ended questionnaires.
- A complete history was taken and thorough physical examinations were performed.

- Collection of blood from the subjects were collected by technician and determined of serum FSH level.
- Before giving the drug, examination of the baseline score of the signs and symptoms of menopause were determined.
- TMF-16 was taken from Traditional Medicine Manufacturing Factory, Mandalay and ammonium chloride was added to TMF-16 to formulate modified TMF-16.

- 2 g of modified TMF-16 added in the plastic bag then it was separately measured and sealed.
- Each subject was given a package of drug for one week.
- One package of drug was consist 21 plastic bags.
- Subject was prescribed 3 plastics bags for one day and 21 plastics bags for one week.

- After one week, all patients were followed up and relief of the signs and symptoms were recorded.
- Then the drug was given for next week and followed up for record of signs and symptoms score up to 4 consecutive weeks.
- After giving the drug for 4 weeks, the assessment of signs and symptoms scores were determined.



Laboratory Methods

- Biochemical analyses of serum samples were performed at Right Lab.
- Serum FSH was measured by an Electrochemiluminescence (ECL) method (Cobas e 411 analyzer, Roche Diagnostic Co., Ltd, Sweden).



Figure 2. 2 g of Modified TMF-16 in plastic bags



Figure 3. Collection of blood



Figure 4. Cobas e 411 analyzer

Data Collection and Data Analysis

- Data analysis was performed by (SPSS) version 21.
- Results were summarized as Mean \pm SD.
- Paired Sample T-test and One Way ANOVA were used for the significant of result.
- A significant level of P value was 0.05.

Results

- *Rajonivruti* was generally common in age range of 46-62 years in this study.
- Mean age of study subjects was 52.15 ± 3.44 years with a range of 46-62 years.
- No significant differences between severity of menopausal symptoms and current age, marital status and physical status (BMI)

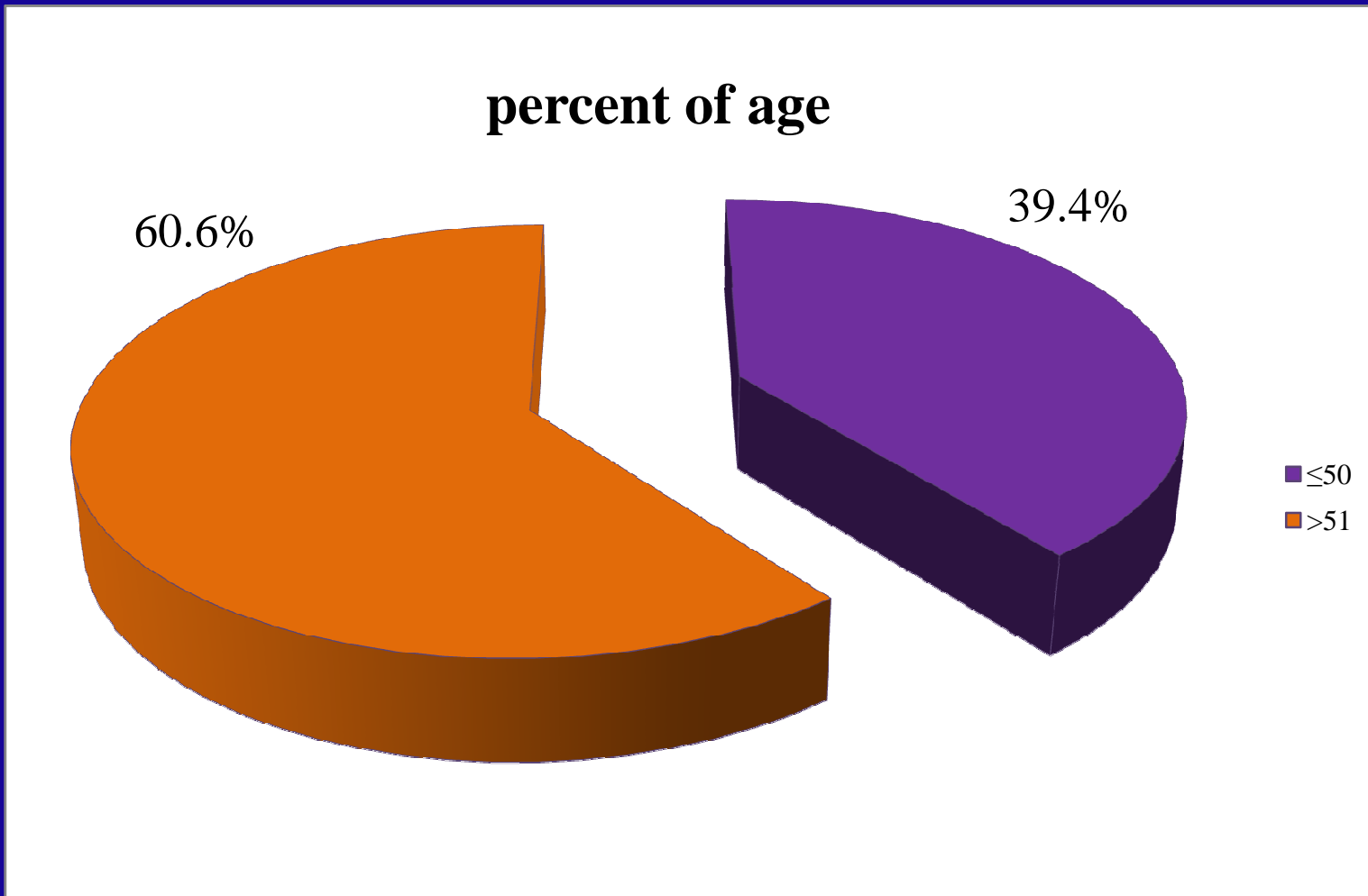


Figure 5 : Age distribution of study population

Prakriti	Frequency	Percent
Vata	10	30.3
Pitta	17	51.5
Kapha	6	18.2
Total	33	100.0

Table 1: Prakriti distribution of study population

Prakriti	Mean	Std.Deviation	95% Confidence Interval For Mean		p
			Lower	Upper	
Vata	94.8960	20.13040	80.4956	109.2964	.000
Pitta	72.0782	21.70396	60.9191	83.2374	
Kapha	48.3517	10.09407	37.7586	58.9447	
Total	74.6788	25.03408	65.8021	83.5555	

Table 2. Serum FSH level in study population

Day 0 symptom mean score in each *Prakriti*

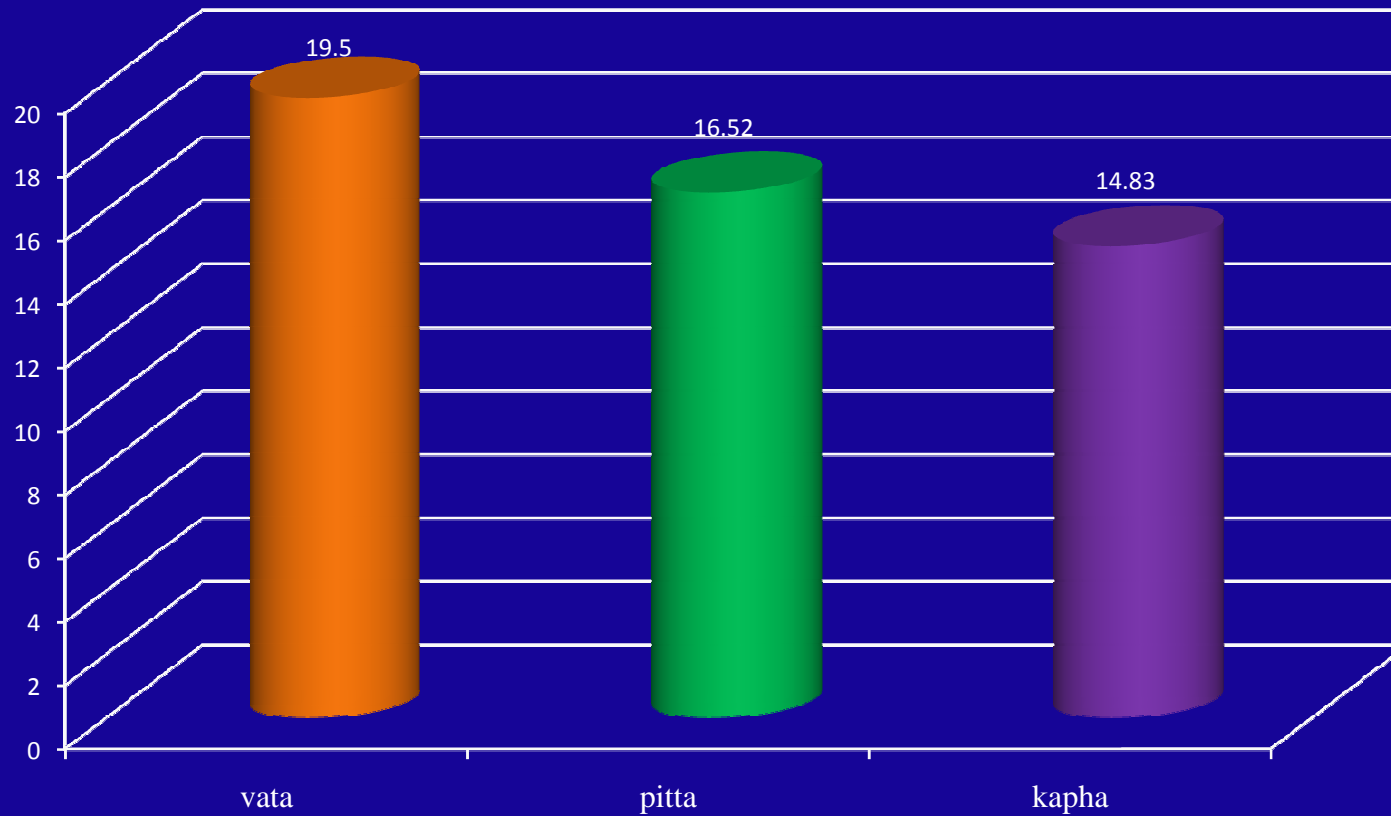


Figure 6. Day 0 symptom mean score in each *Prakriti*

Comparison of bar of mean on hotflush

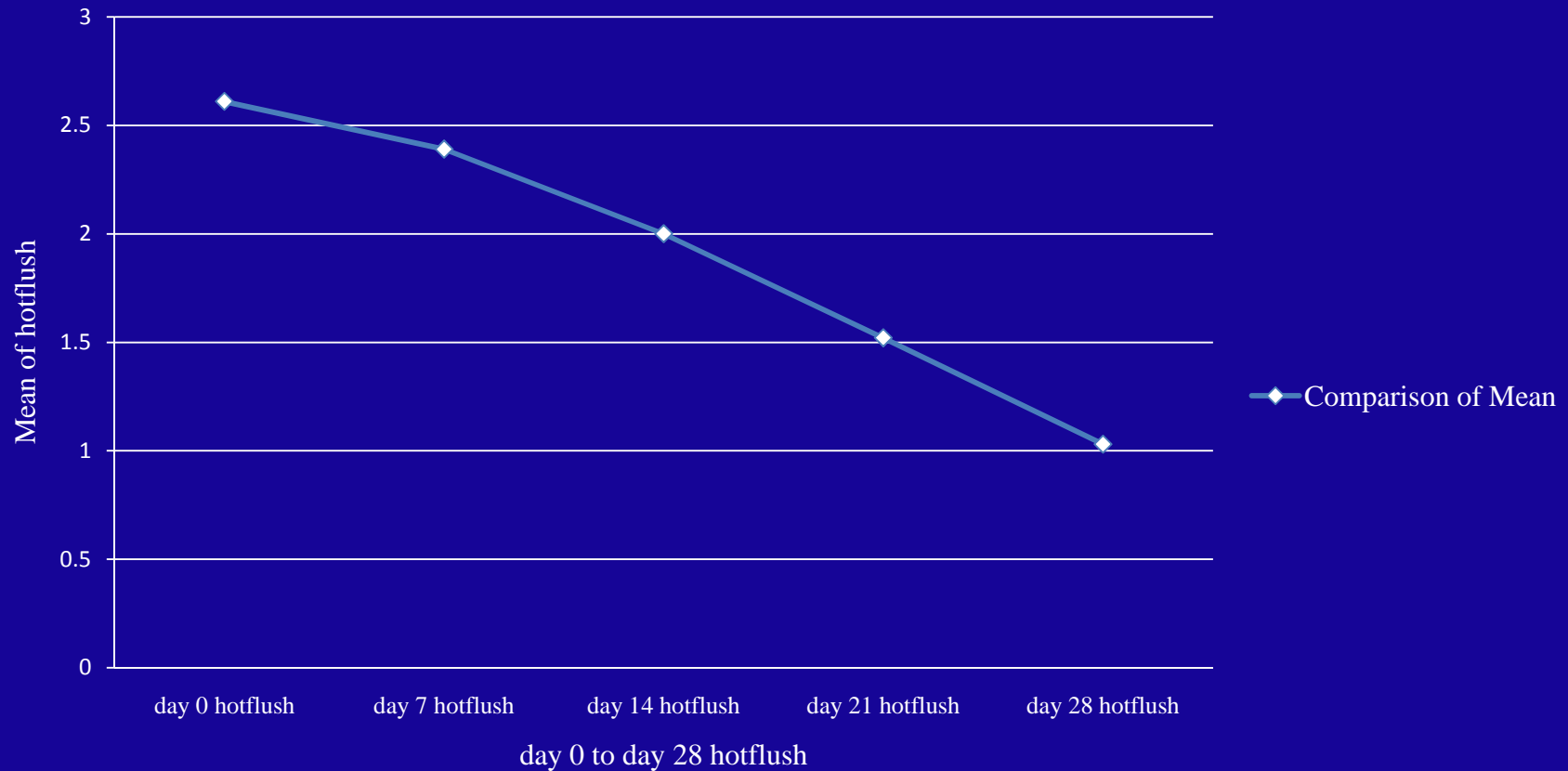


Figure 7. Comparison of bar of mean on hotflush from day 0 to day 28

Comparison of bar of mean on night sweat

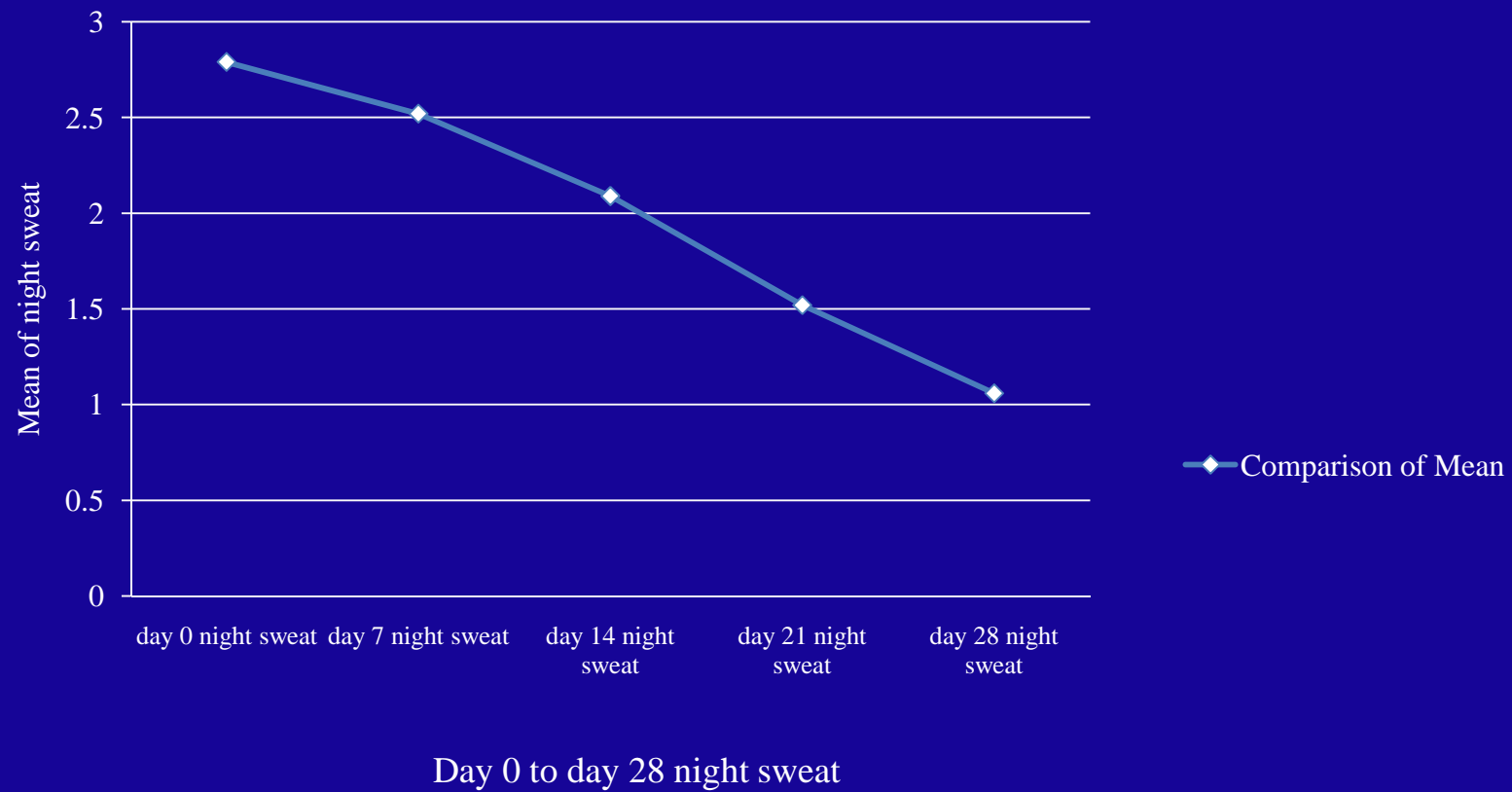
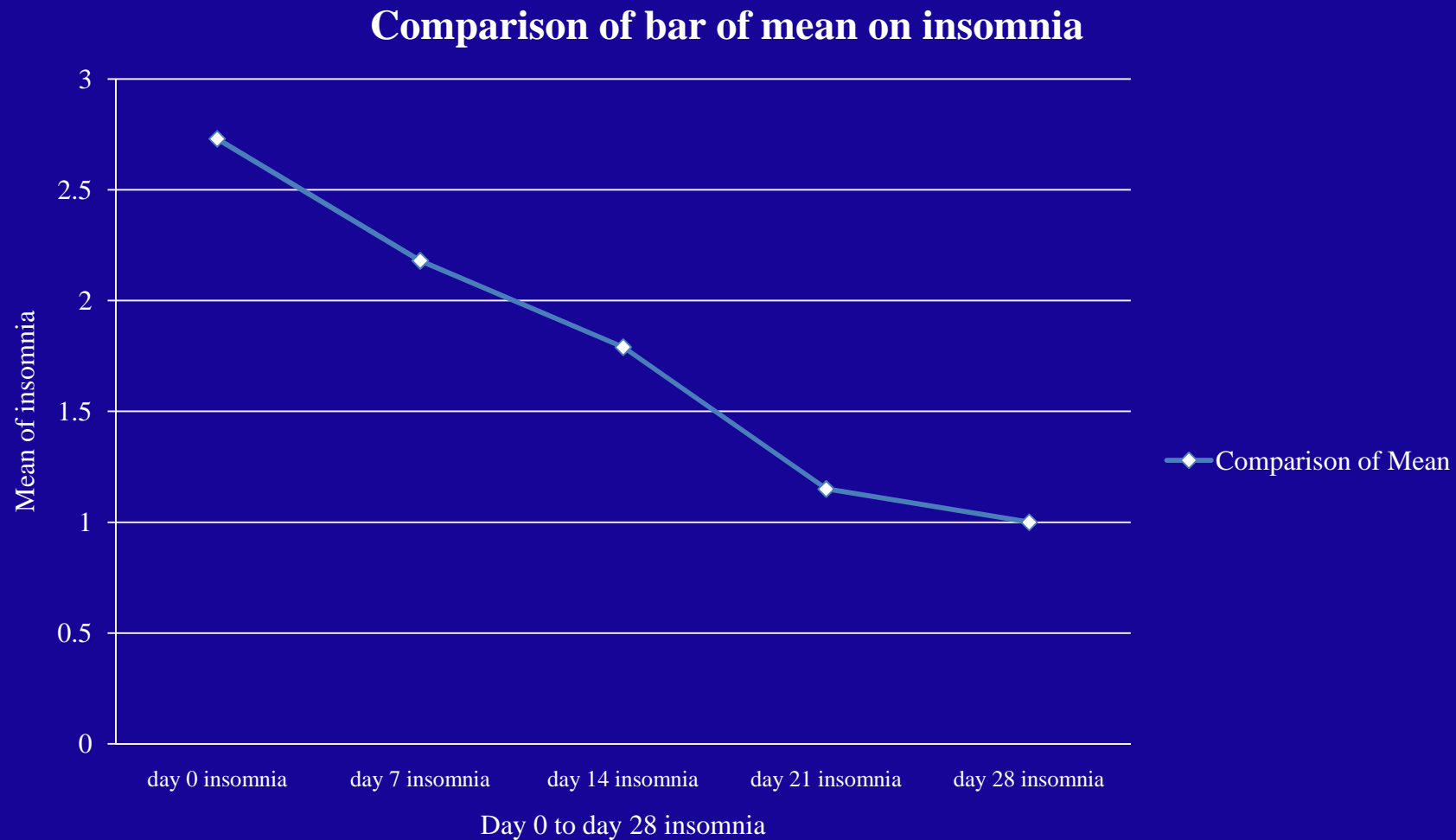


Figure 8: Comparison of bar of mean on night sweat from day 0 to day 28



**Figure 9. Comparison of bar of mean on insomnia
from day 0 to day 28**

Comparison of bar of mean on muscle and joint pain

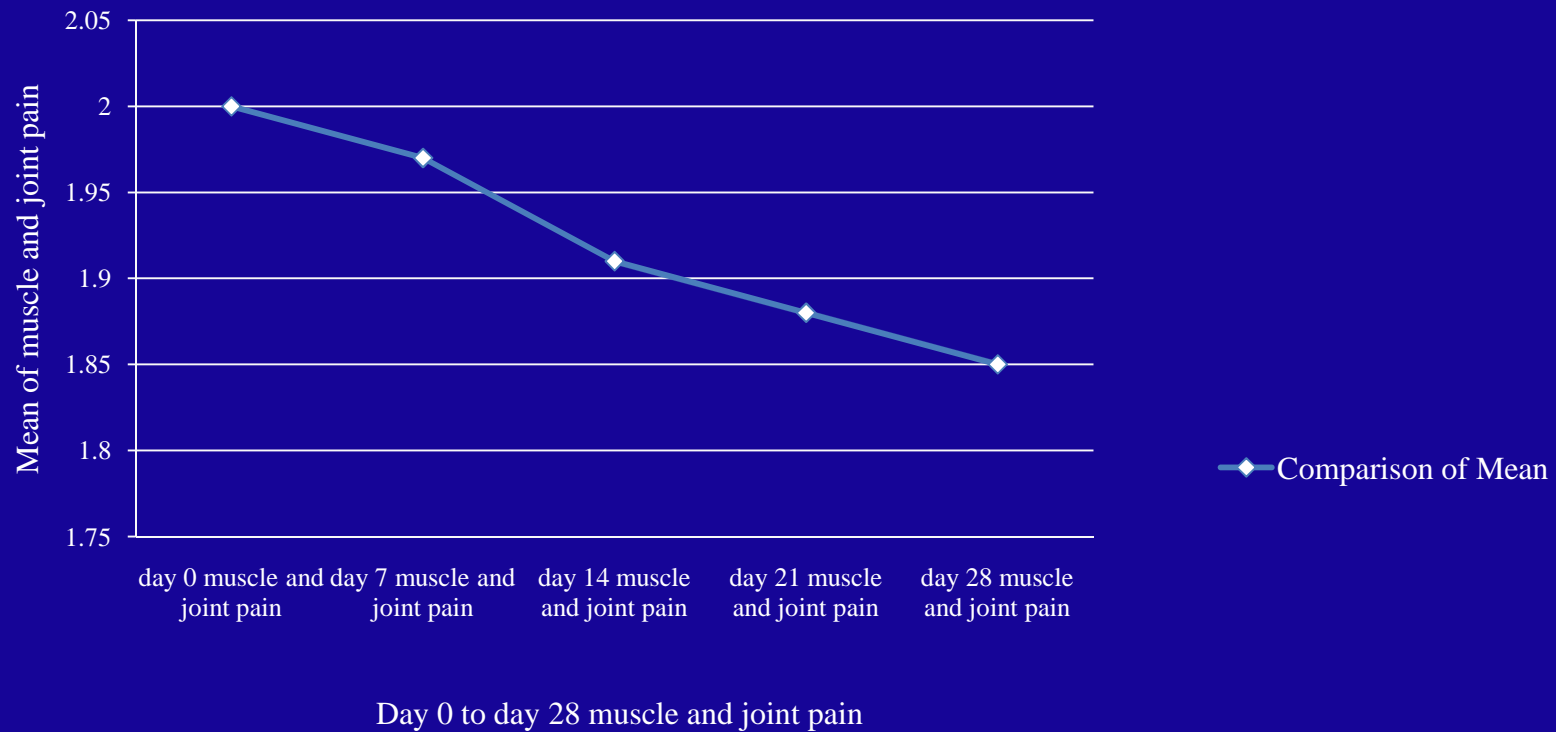


Figure 10. Comparison of bar of mean on muscle and joint pain from day 0 to day 28

Comparison of bar of mean on irritability

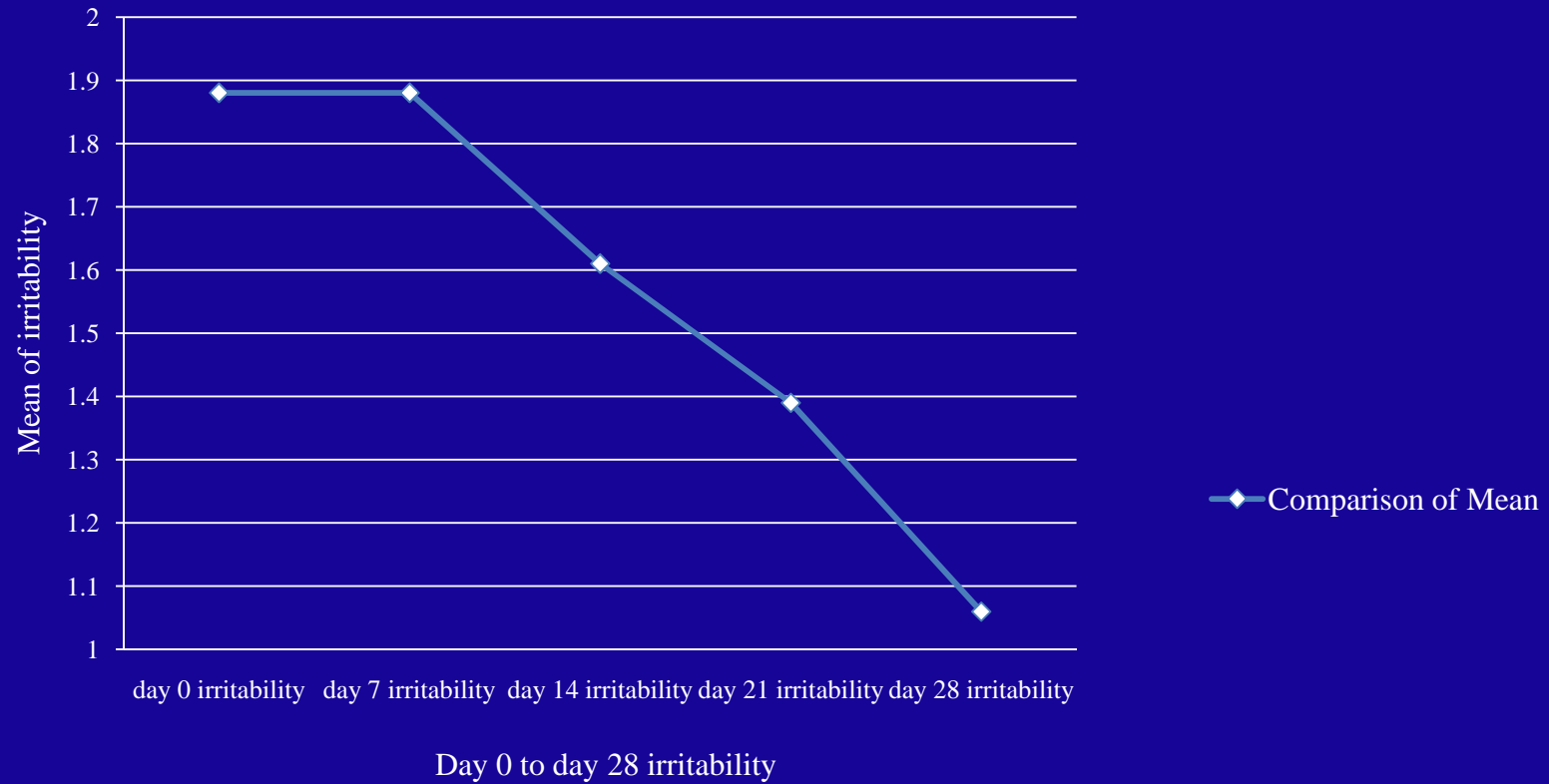
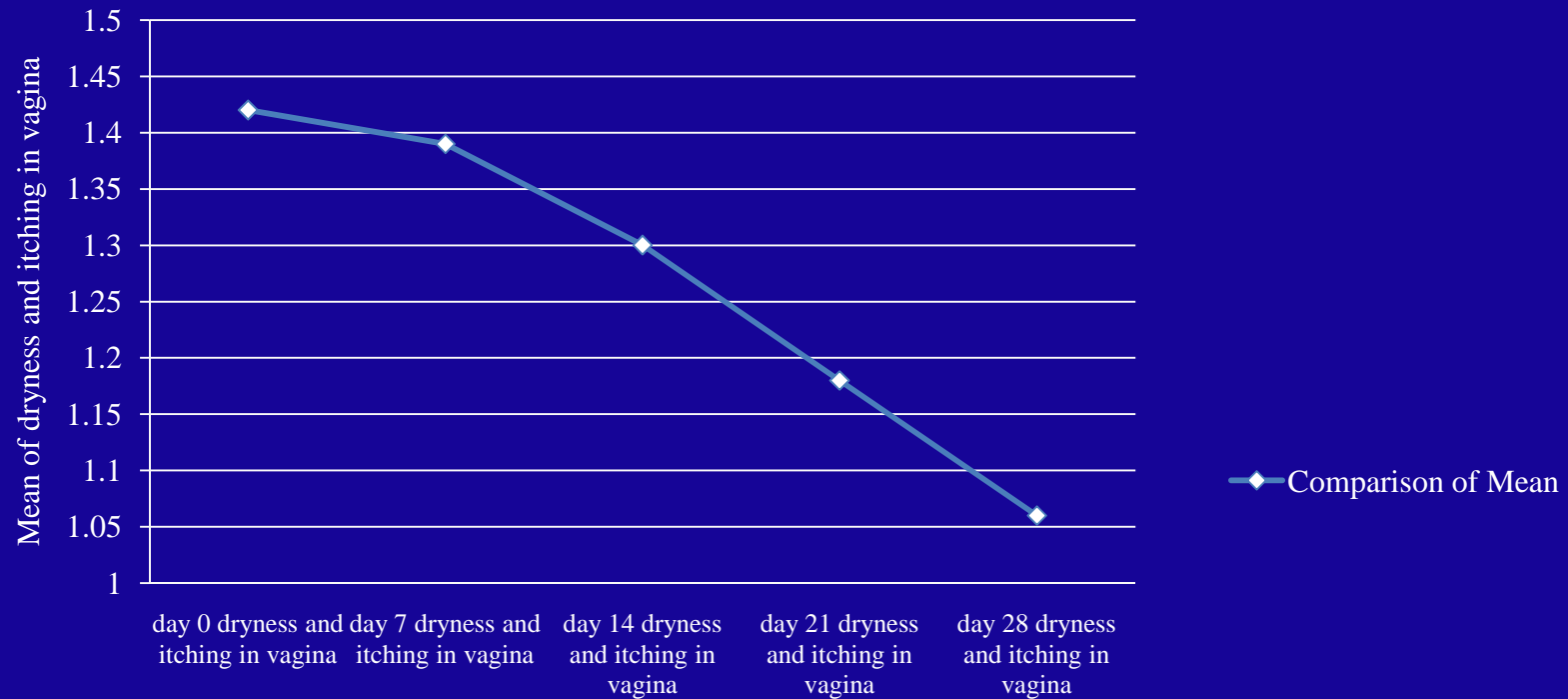


Figure 11. Comparison of bar of mean on irritability from day 0 to day 28

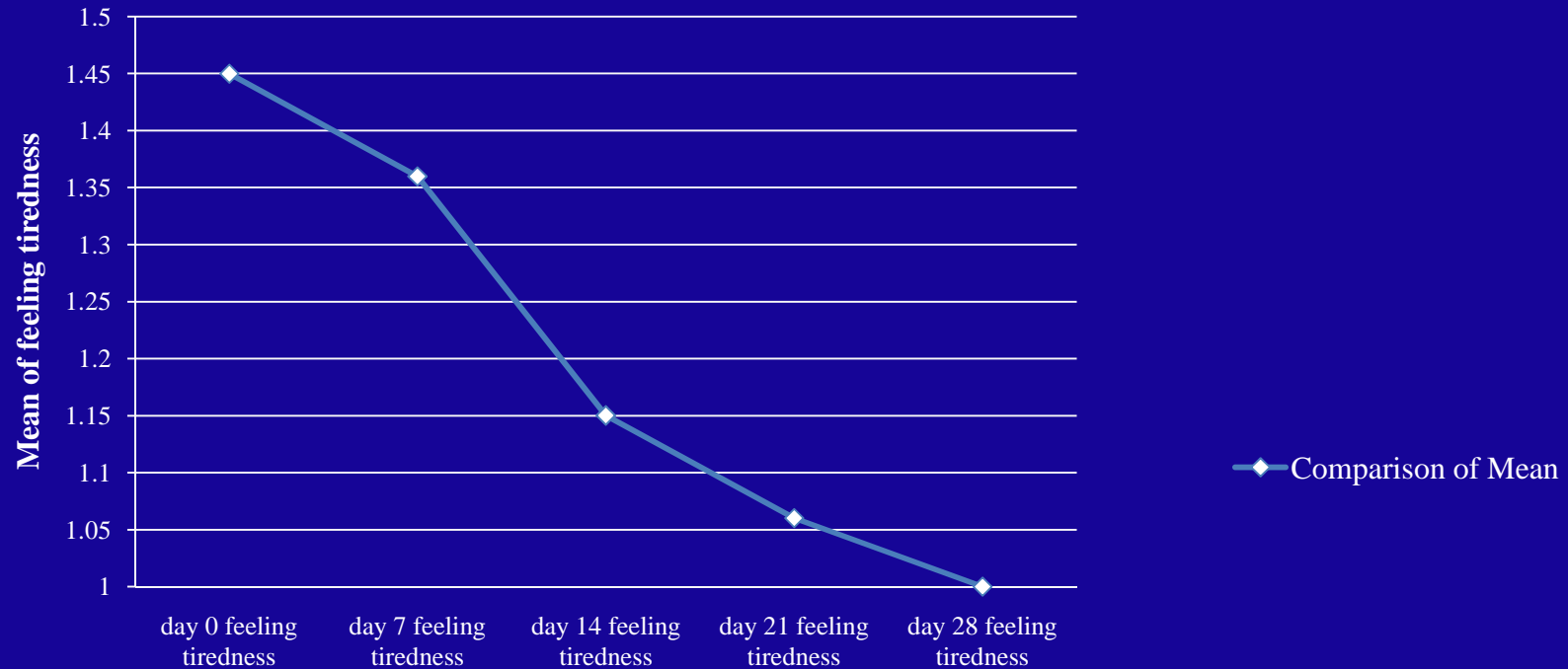
Comparison of bar of mean on dryness and itching in vagina



Day 0 to day 28 dryness and itching in vagina

Figure 12. Comparison of bar of mean on dryness and itching in vagina from day 0 to day 28

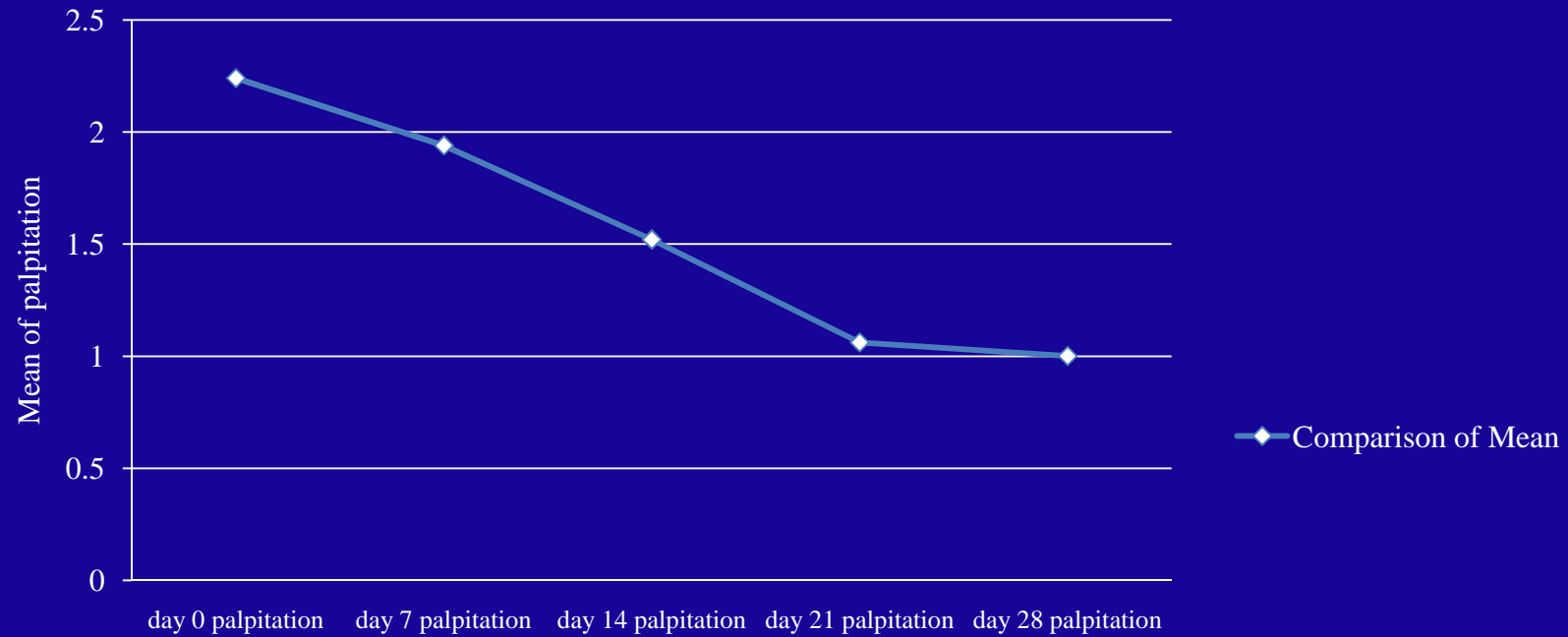
Comparison of bar of mean on feeling tiredness



Day 0 to day 28 feeling tiredness

Figure 13. Comparison of bar of mean on feeling tiredness from day 0 to day 28

Comparison of bar of mean on palpitation



Day 0 to day 28 palpitation

Figure 14. Comparison of bar of mean on palpitation from day 0 to day 28

Prakriti		Mean	Std. Deviation	95% Confidence Interval for Mean		p
				Lower Bound	Upper Bound	
Percent improvement between day0 and day7	vata	7.8473	3.65125	5.2354	10.4593	0.112
	pitta	10.3943	4.65870	7.9990	12.7896	
	kapha	5.7463	6.65403	1.2366	12.7293	
	Total	8.7774	4.99011	7.0080	10.5468	
Percent improvement between day7 and day14	vata	16.8351	4.91308	13.3205	20.3497	0.364
	pitta	13.4142	6.68940	9.9748	16.8535	
	kapha	14.1392	5.36702	8.5069	19.7715	
	Total	14.5826	6.00096	12.4548	16.7105	
Percent improvement between day14 and day21	vata	21.4061	6.20924	16.9643	25.8479	0.325
	pitta	18.0043	10.00629	12.8596	23.1491	
	kapha	14.4017	9.76707	4.1518	24.6516	
	Total	18.3801	9.03970	15.1748	21.5855	
Percent improvement between day21 and day28	vata	21.9708	11.61492	13.6620	30.2796	0.022
	pitta	11.0791	8.60791	6.6533	15.5048	
	kapha	10.7155	9.90056	.3255	21.1055	
	Total	14.3135	10.79882	10.4844	18.1426	
Percent improvement between day0 and day28	vata	53.4660	4.88864	49.9689	56.9631	0.000
	pitta	43.8441	7.36359	40.0581	47.6301	

Mean score of *Prakriti*

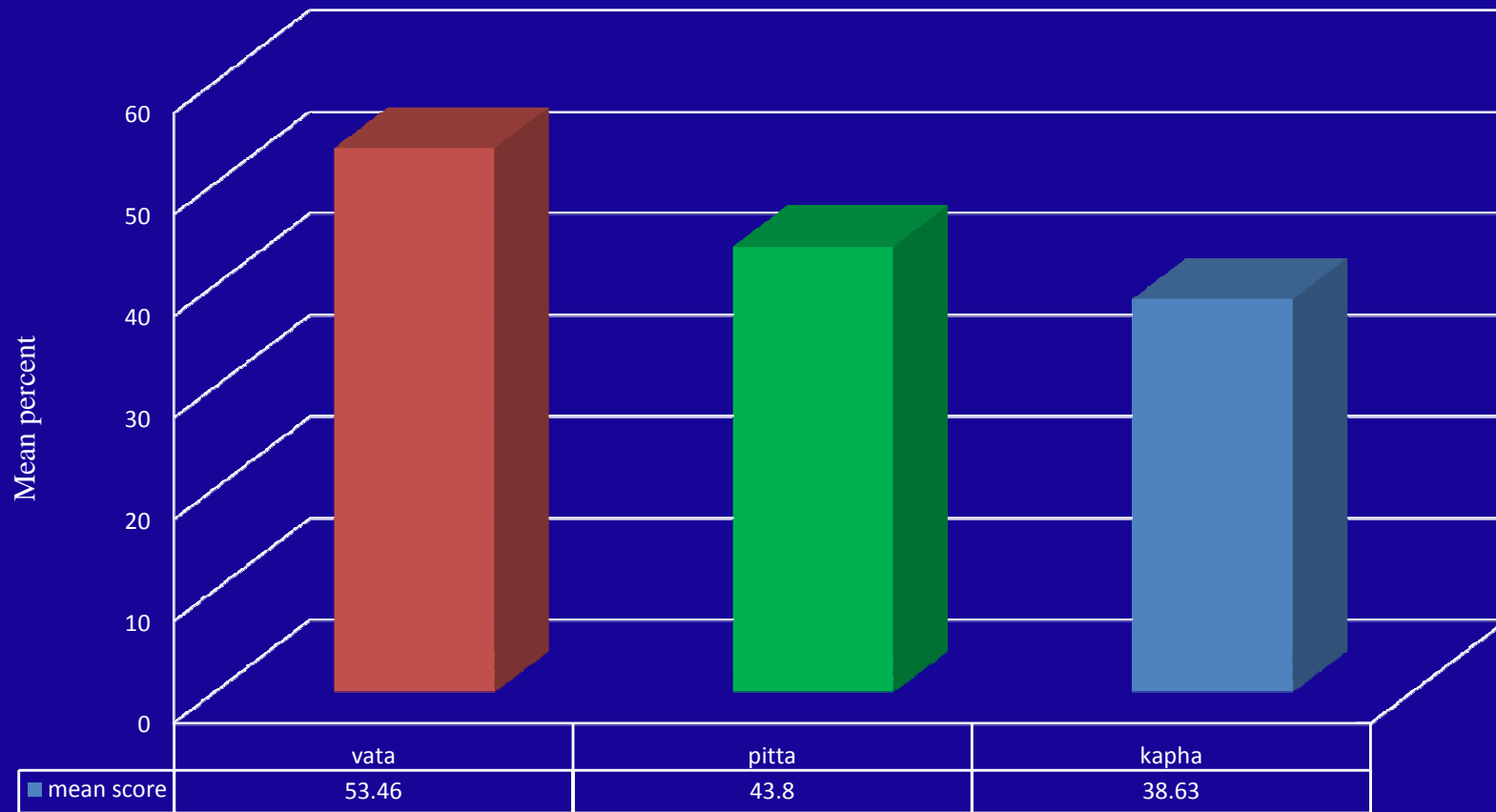


Figure 15. Percent improvement mean score in each *Prakriti*

Discussion

➤ According to Ayurvedic, menopause treatment requires special herbs for strengthening or rejuvenating the female reproductive system, along with herbs to help regulate the *tridoshas* and calm the emotions.

➤ Herbs for *Vata* should be utilized and formulas prepared should be cooling in nature and *dipanas* should be added to formulas that pacify both *Vata* and *Pitta*.

- According to Desana system of traditional medicine, every type of diseases can occur due to imbalance of *Mahabhutas*.
- After menopause, *Apo* and *Prithivi* elements are diminished and *Tezo* element is increase.

- Thus, the clinical manifestation that is dominated by *Tezo* can be seen.
- The most prevalence signs and symptoms of menopause are due to influence of functional properties of *Ushna Tezo* and *Vayu Mahabhutas*.

- Therefore, the principle of treatment was to subdue or calm *Ushna Tezo* and *Vayu* elements.
- The taste of Modified TMF-16 is cold, sweet and salty in taste.

- These tastes can subdue the *Ushna* Tezo element and *Vayu* element and tonify (encourage) the internal *Prithvi* and *Apo* elements.
- So, the results of this study can clearly prove evidence for the principle of treatment in Desana system of traditional medicine.

Three most prevalent menopausal symptoms for all women (n = 33) were:

- **Night sweating (96.9%)**
- **Insomnia (93.9%) and**
- **Hot flush (84%)**

This was followed by symptoms of palpation (81.8%), muscle and joint pain (78.7%), irritability (60.6%), dryness and itching in vagina (33.3%) and feeling tiredness (30.3%).

- Menopausal symptoms were significantly severe p.value < 0.003 in *vata Prakriti* patients.
- Effectively p.value < 0.0001 relieved symptoms in *vata, pitta* and *kapha Prakriti* patients.
- This result showed that the severity of menopausal symptoms had a significant association with *vata Prakriti*.

- *Vata Prakriti* patients suffered more severe symptoms than others *Prakriti*.
- Serum FSH level is slightly higher in *vata Prakriti* patients than *pitta*, 72.07 ± 21.70 and *kapha*, 48.35 ± 10.09 .

➤ The result of this study showed that highly significant improvement (p.value <0.0001) of modified TMF-16 on menopausal symptoms.

- But muscle and joints pain was not significant (p.value < 0.023) in this study.
- Overall effect of the treatment, the obtained results can be proved statistically in study population.

Conclusion and Suggestion

- The present study revealed that Modified TMF-16 was highly significant effect on menopausal symptoms.
- This study explored the prevalence of menopausal symptoms in study population and the relationship between menopausal symptoms and *Prakriti*.

- Muscle and joints pain was not significant relief in this study.
- For patients who still complain of muscle and joint pain after 4 weeks of taking Modified TMF-16 should be consider to other effective treatments like *Abyanga*, *Patrapinda Sweda*, *Vasti* ect.

➤ Due to the small number of patients and limited study settings, patients in this study may not be representative of the whole general population and data might not sufficient to recommend of correlation of age, marital status and physical status (BMI) in patients with *Rajonivruti*.

➤ Further studies should be conducted on the effect of other traditional medicine formula and other medicinal plants for the treatment of *Rajonivruti*.

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Thank You