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Efficacy of a Topical Ayurvedic Preparation (Zandu Pain Relief Gel Ultra Strong) – Relief from the Symptoms of Joint Pain, Back Pain and Sprain

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ABSTRACT

Zandu Pain Relief Gel Ultra Strong is a topical ayurvedic formulation comprising active ingredients such as Mentha sp. - Satva, Cinnamomum camphora - Satva, Trachyspermum ammi - Satva, Gaultheria fragrantissima - OL., Eucalyptus globulus - OL., Pinus longifolia - OL., Syzygium aromaticum - OL., Capsicum annum - Satva, Boswellia serrata - Oleo-Gum-Resin, Rosmarinus officinalis - OL., Zingiber officinale - Oleo-Resin, Linum usitatissimum - OL., Benzyl alcohol, Base: q.s.This study aims to evaluate the efficacy of this over-the-counter (OTC) product for relieving symptoms of joint pain, back pain, and sprain. A prospective, open-label, phase 4 study was conducted with consenting adults (n=30) experiencing symptoms of joint pain, back pain, and sprain. Each participant received one tube of the product to use over a 6-day period and provided feedback on its effectiveness using a visual analogue scale. Efficacy scores were recorded on days 0, 2, 4, and 6. Results showed significant relief from joint pain, back pain, and sprain within 2 days, with further reductions observed by day 6 ($p < 0.001$).

Conclusion: Zandu Pain Relief Gel Ultra Strong is an effective remedy for alleviating the symptoms of joint pain, back pain, and sprain.

Keywords: *Zandu, Joint Pain, Back Pain, Sprain, Pain Relief.*

INTRODUCTION

Joint pain, back pain, and sprains are common musculoskeletal complaints that significantly impact daily functioning and quality of life in individuals across all age groups. These discomforts can arise from various causes, including physical exertion, sports injuries, arthritis, or prolonged periods of physical inactivity. Symptoms often include localized pain, inflammation, stiffness, and reduced range of motion, all of which can disrupt both personal and professional activities. Over-the-counter (OTC) pain relief solutions are frequently sought for such conditions, with topical treatments like gels, creams, and ointments gaining widespread popularity due to their ease of application and quick onset of action.

Research has shown a steady consumer preference for ayurvedic and herbal-based topical formulations in pain management, especially for joint and muscular pain relief. These products, often composed of natural, plant-based ingredients, are appealing due to their minimal side effects and traditional efficacy in alleviating pain. Ayurvedic products now make up a substantial share of the OTC market, reflecting an increasing consumer inclination toward holistic remedies. Zandu Pain Relief Gel, formulated to relieve joint pain, back pain, and sprains, integrates these ayurvedic principles, offering consumers a non-invasive and natural approach to pain management. This study aims to evaluate the efficacy of Zandu Pain Relief Gel ultra strong in providing relief from these common complaints.

Zandu Pain Relief Gel ultra strong is an ayurvedic topical formulation containing Mentha sp. - Satva: 11.5, Cinnamomum camphora - Satva: 2.0, Trachyspermum ammi - Satva: 0.2, Gaultheria fragrantissima - OL.: 17.0, Eucalyptus globulus - OL.: 2.0, Pinus longifolia - OL.: 0.5, Syzygium aromaticum - OL.: 0.5, Capsicum annum - Satva: 0.015, Boswellia serrata - Oleo-Gum-Resin: 2.0, Rosmarinus officinalis - OL.: 1.0, Zingiber officinale - Oleo-Resin: 0.2, Linum usitatissimum - OL.: 3.0, Benzyl alcohol: 0.5, Base: q.s.

The product is applied to areas such as the Joints , back and sprain affected areas to relieve pain . Zandu Pain Relief Gel ultra strong claims to provide comforting relief from the symptoms of Joint pain , Back Pain and Sprain. This study was conducted to evaluate and substantiate these claims.

MATERIAL AND METHODS

Study Design

This prospective, open-label, phase 4 study was conducted using market samples of Zandu Pain Relief Gel Ultra Strong. A total of 30 subjects, aged 18–60 years, who were experiencing joint pain, back pain, and sprain were enrolled in the study after providing informed consent in their preferred language (either their mother tongue or English). Participants with pre-existing conditions such as allergies, hypersensitivity, or other chronic ailments were excluded.

The study was conducted over a two-month period (from 1st September 2024 to 30th October 2024), with each subject observed for a duration of 6 days.

Each participant received one tube of Zandu Pain Relief Gel Ultra Strong (net weight: 45 ml) and provided feedback through a set of tailored questions developed by the investigators. Responses were recorded on a visual analogue scale ranging from 0 to 4, with scores defined as follows: 0 - "Poor," 1 - "Fair," 2 - "Good," 3 - "Very Good," and 4 - "Excellent." The evaluated parameters included joint pain, back pain, and sprain. Scores were documented on days 0, 2, 4, and 6.

STATISTICAL METHODS

To assess the significance of Zandu Pain Relief Gel ultra strong's efficacy across the measured parameters, a two-tailed Student's t-test was performed.

RESULTS

An analysis of the demographic data (Tables 1 and 2) revealed a slightly higher percentage of female participants (53.3%) compared to male participants (46.7%). The average age for female subjects was 48.25 years, while the average age for male subjects was 47.7 years.

In terms of occupational distribution (Table 3 and Graph 1), most participants were from the service sector (56.67%), followed by housewives (33.33%). The fewest participants were engaged in business (6.67%). Regarding pre-existing conditions (Table 4 and Graph 2), joint pain (knee pain) was the most reported issue (43.3%), followed by back pain (30.0%) and sprain (26.7%).A two-tailed significance test (Table 5) showed a statistically significant reduction in pain across all three conditions from day 0 to day 2 ($p < 0.001$). Significant improvements continued through days 2, 4, and 6 for joint pain, back pain, and sprain compared to the baseline measurements.The efficacy distribution scores (Table 6) indicated positive results across all conditions, with joint pain relief showing the highest improvements. By day 6, 53.85% of participants rated joint pain relief as "excellent," increasing from 0% on day 2 (Graph 3). Similarly, for sprain relief, 55.56% of participants rated their relief as "excellent" by day 6, up from 11.11% on day 4 (Graph 4). Back pain relief also saw marked improvement, with 62.5% of participants rating it as "excellent" by day 6, compared to 25% of "Very Good" on day 4 (Graph 5).The overall reduction in pain symptoms is summarized in Table 7 and Graph 6. Using day 0 as the baseline (100%), joint pain symptoms decreased to 65.96% by day 2, 40.43% by day 4, and 17.02% by day 6. Similarly, back pain symptoms reduced from 100% to 68.57% by day 2, 48.57% by day 4, and 11.43% by day 6. For sprain relief, symptoms reduced from 100% to 70.97% by day 2, 35.48% by day 4, and 12.90% by day 6.

DISCUSSION

The efficacy of Zandu Pain Relief Gel Ultra Strong, a topical ayurvedic formulation, was assessed in 30 subjects over a 6-day period. Visual analogue scores reported by participants on days 0, 2, 4, and 6 were analyzed to evaluate the product's performance. A two-tailed significance test demonstrated a substantial reduction in joint pain, back pain, and sprain as early as day 2 compared to the baseline (day 0), with statistical significance ($p < 0.001$). Further improvements were noted on days 4 and 6, indicating that Zandu Pain Relief Gel Ultra Strong effectively alleviates pain across all three conditions.

The visual analogue scores were converted to percentage distributions to provide clearer insights into efficacy parameters. On day 0, subjects predominantly rated the product's impact on joint pain as poor or fair. However, by day 6, 53.85% of participants reported "excellent" relief from joint pain. For sprain relief, the scores improved from fair on day 2 to 55.56% rating it as "excellent" by day 6. Similarly, back pain relief showed progressive improvement, with 62.5% of participants reporting "excellent" relief by day 6, a significant rise from day 4.

To evaluate overall performance, the reduction in pain symptoms for joint pain, back pain, and sprain was examined. Taking day 0 as the baseline (100%), joint pain symptoms reduced to 17.02% by day 6. Similarly, back pain symptoms were reduced from 100% to 11.43%, while sprain symptoms dropped to 12.90% by day 6. This represents a substantial reduction in pain severity, demonstrating Zandu Pain Relief Gel Ultra Strong's strong efficacy in providing rapid and significant symptom relief.

CONCLUSION

The findings from the 6-day clinical study on Zandu Pain Relief Gel Ultra Strong indicate that the product is an effective remedy for joint pain, back pain, and sprain. Participants in the study reported significant relief from these conditions, irrespective of initial severity levels. The product demonstrated rapid pain reduction, with substantial improvements noted as early as day 2, continuing through to day 6. Additionally, there was excellent overall compliance with the treatment, and no clinically significant adverse reactions were observed throughout the trial. Therefore, it can be concluded that Zandu Pain Relief Gel Ultra Strong is effective in alleviating joint pain, back pain, and sprain, making it a reliable option for fast and sustained pain relief.

RESULTS

Table 1: Age

	N	Mean
Female	16	48.25
Male	14	47.7
Total	30	48.0

Table 2: Gender

	N	%
Female	16	53.3
Male	14	46.7
Total	30	100.0

TABLE 3: OCCUPATION

Occupation	Subjects	Percentage
Maid	1	3.33
House wife	10	33.33
Business	2	6.67
Service	17	56.67
Total	30	100

Graph 1: Occupation

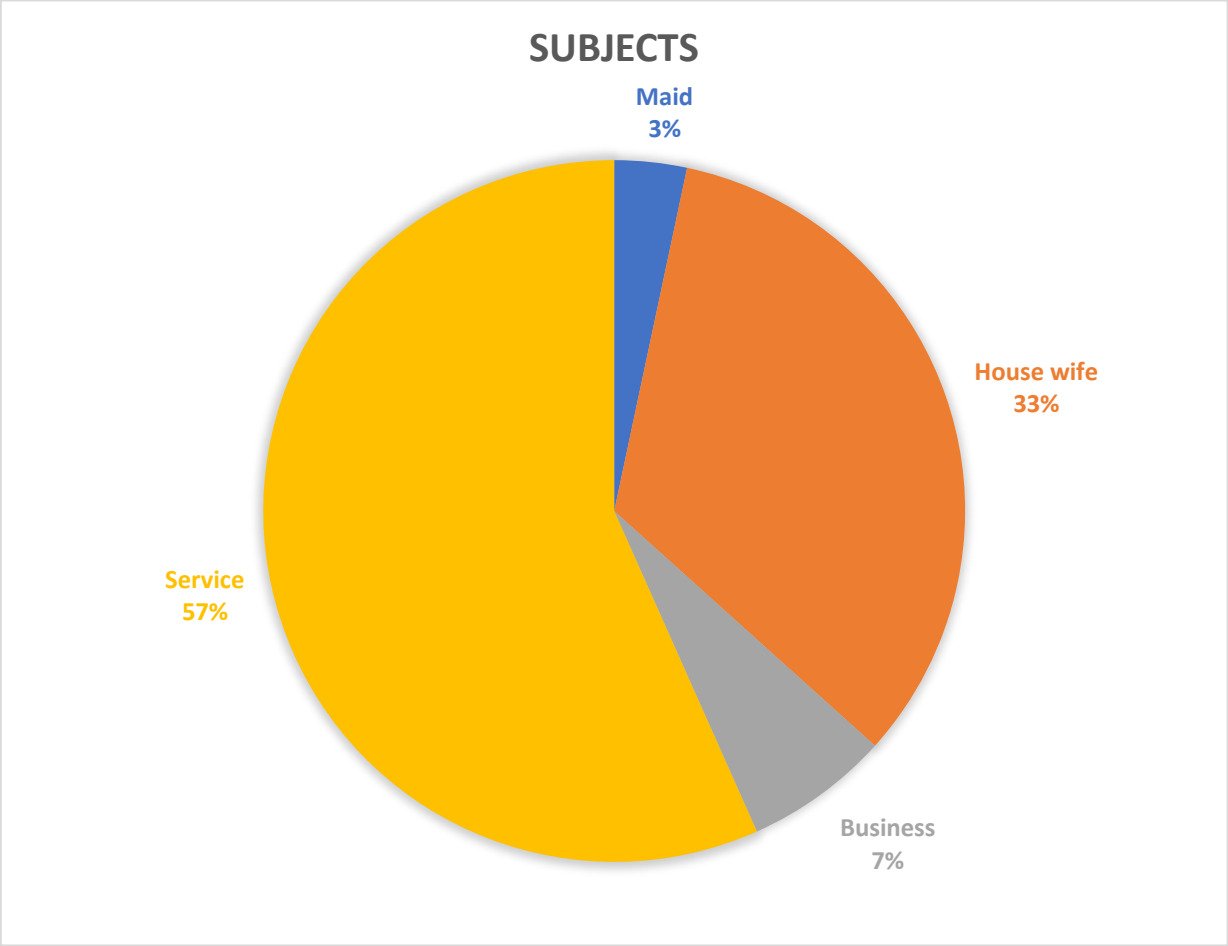


Table 4: Efficacy In Pain Reduction

Existing problems	N	Percentage
Joint pain (Knee pain)	13	43.3
Back Pain	9	30.0
Sprain	8	26.7
Total	30	100.0

Graph 2: Existing Issues

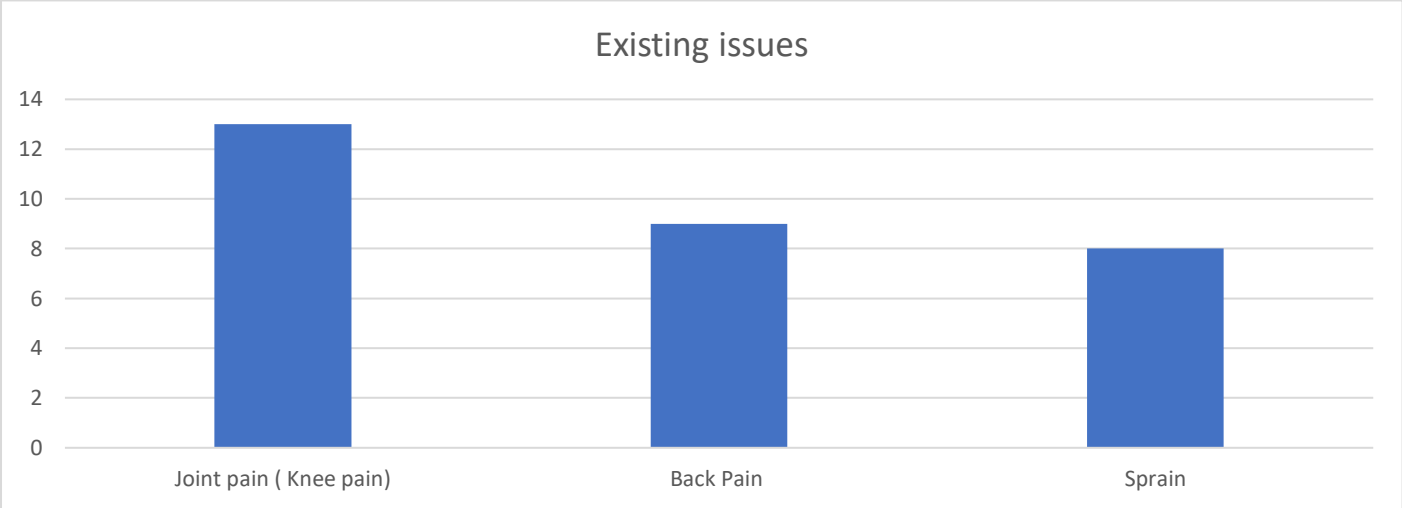


Table 5: Zandu Pain Relief Gel Ultra Strong Efficacy Parameters - Test For Significance

Efficacy	Joint Pain		Back Pain		Sprain	
	T value	Sig	T value	Sig	T value	Sig
Day 0 vs Day 2	4.381	p<0.001	1.224	p<0.001	2.035	p<0.001
Day 0 vs Day 4	1.172	p<0.001	1.392	p<0.001	1.443	p<0.001
Day 0 vs Day 6	1.767	p<0.001	0.405	p<0.001	2.559	p<0.001
Day 2 vs Day 4	4.286	p<0.001	1.994	p<0.01	2.989	p<0.001
Day 2 vs Day 6	9.501	p<0.001	3.261	p<0.001	7.103	p<0.001
Day 4 vs Day 6	8.935	p<0.01	1.356	p<0.001	1.669	p<0.05

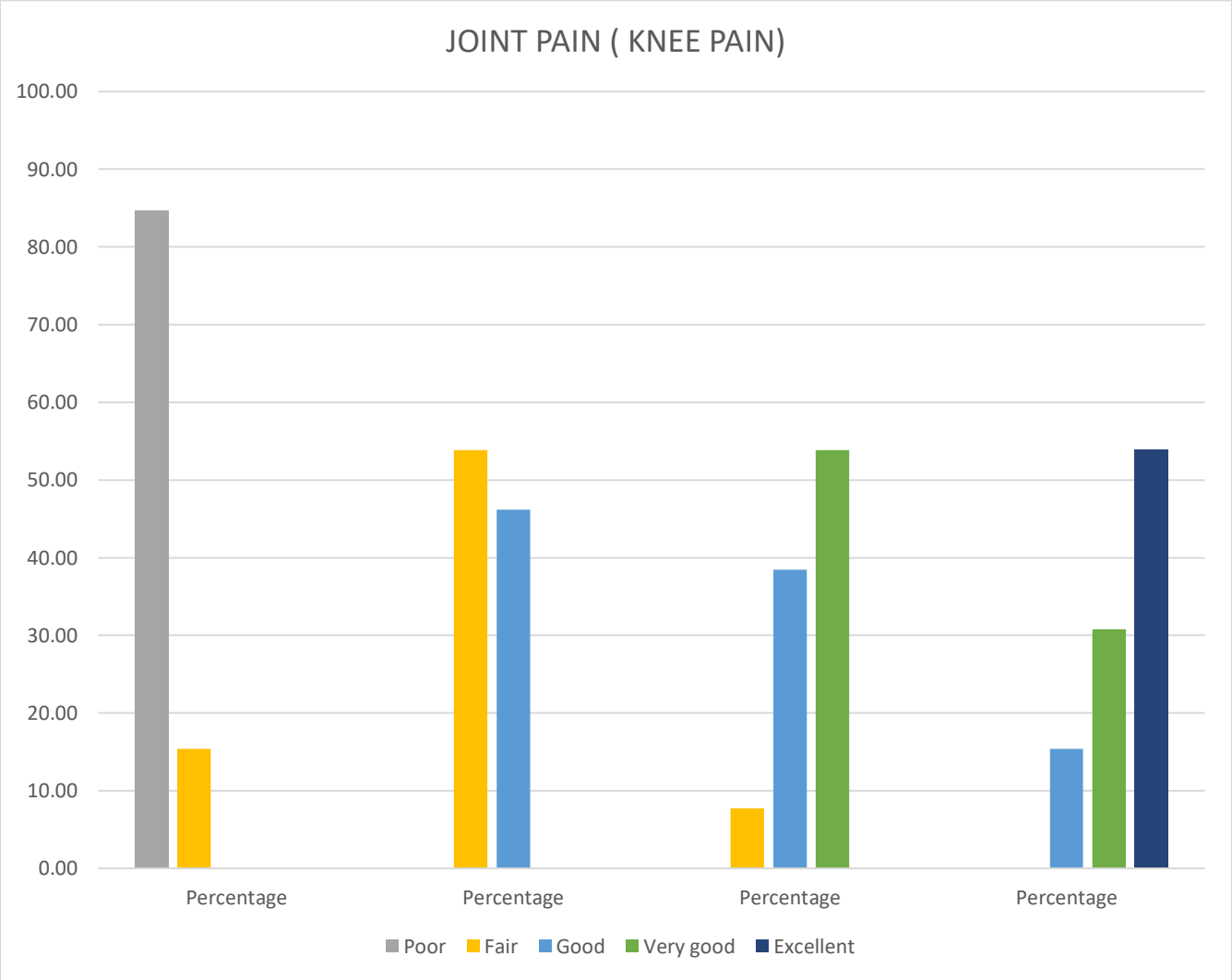
Table 6: Zandu Pain Relief Gel Ultra Strong Efficacy Parameters- Percentage Distribution

Efficacy	Day 0		Day 2		Day 4		Day 6	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Joint pain (Knee pain)								
Poor	11	84.62	0	0.00	0	0.00	0	0.00
Fair	2	15.38	7	53.85	1	7.69	0	0.00
Good	0	0.00	6	46.15	5	38.46	2	15.38
Very good	0	0.00	0	0.00	7	53.85	4	30.77
Excellent	0	0.00	0	0.00	0	0.00	7	53.85

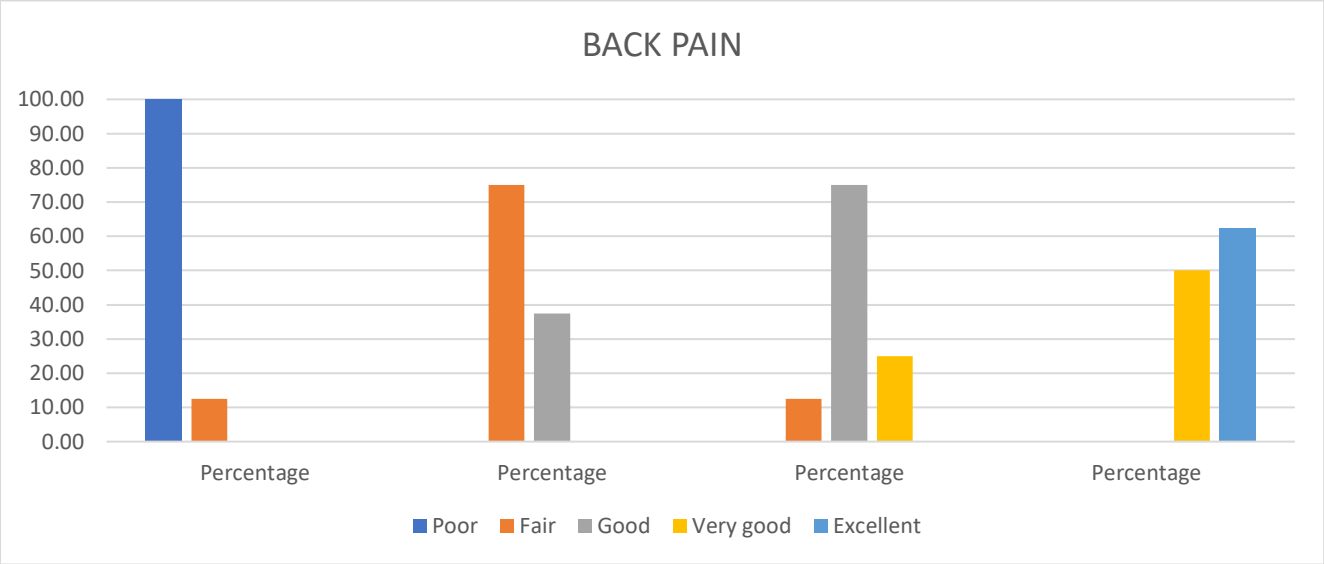
Sprain								
Poor	7	77.78	0	0.00	0	0.00	0	0.00
Fair	1	11.11	6	66.67	0	0.00	0	0.00
Good	0	0.00	2	22.22	4	44.44	1	11.11
Very good	0	0.00	0	0.00	3	33.33	2	22.22
Excellent	0	0.00	0	0.00	1	11.11	5	55.56

Back Pain								
Poor	8	100.00	0	0.00	0	0.00	0	0.00
Fair	1	12.50	6	75.00	1	12.50	0	0.00
Good	0	0.00	3	37.50	6	75.00	0	0.00
Very good	0	0.00	0	0.00	2	25.00	4	50.00
Excellent	0	0.00	0	0.00	0	0.00	5	62.50

Graph 3: Efficacy Parameters – Joint Pain (Knee Pain)



Graph 4: Efficacy Parameters – Back Pain



Graph 5: Efficacy Parameters – Sprain Relief

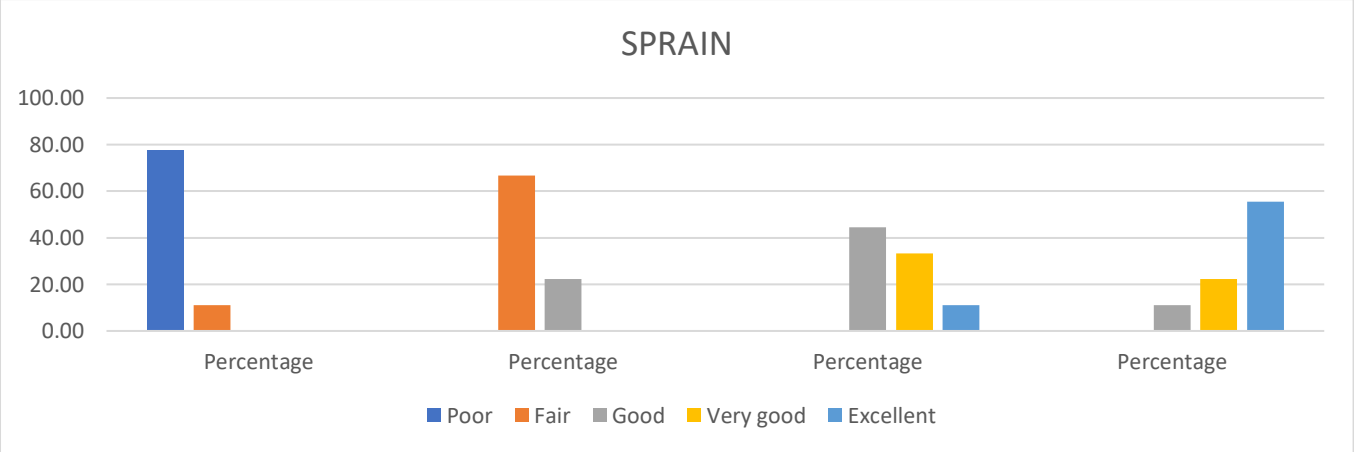
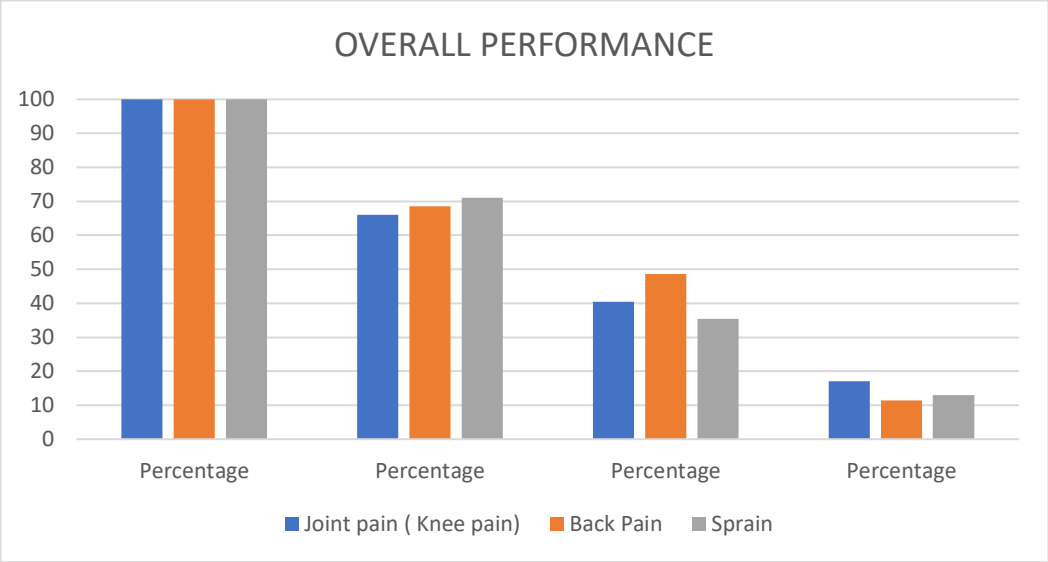


TABLE 7: OVERALL PERFORMANCE

Efficacy parameters	Day 0		Day 2		Day 4		Day 6	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Joint pain (Knee pain)	3.92	100	2.58	65.96	1.58	40.43	0.67	17.02
Back Pain	3.89	100	2.67	68.57	1.89	48.57	0.44	11.43
Sprain	3.88	100	2.75	70.97	1.38	35.48	0.50	12.90

Graph 6: Overall Performance



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