



## Efficacy of a Topical Ayurvedic Preparation (Zandu Vaporizing Cold Rub) – Relief from Cold and Associated Symptoms

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### ABSTRACT

*Zandu Vaporising Cold Rub is a topical Ayurvedic preparation containing active ingredients such as camphor, turpentine oil, eucalyptus oil, and menthol. This study aims to evaluate the product's claims as an over-the-counter (OTC) remedy for cold and pain relief. A prospective, open-label, phase 4 study was conducted with consenting adults (n=30) experiencing cold-related symptoms. Each participant received one bottle of the product and used it over a 6-day period. Efficacy was measured through a visual analogue scale on days 0, 2, 4, and 6. The results showed a significant reduction in symptoms of a blocked nose, cold, and congestion within 2 days, and a reduction in cold-related headaches by day 6 ( $p < 0.001$ ). Conclusion: Zandu Vaporising Cold Rub is an effective treatment for cold and its associated symptoms.*

**Keywords:** Zandu, Common Cold, Nasal Congestion, Headache

### INTRODUCTION

The common cold is one of the most frequent causes of illness in both adults and children. It is an upper respiratory tract infection primarily caused by viruses, and it is typically transmitted through virus-laden droplets or by direct contact with infected secretions. Common cold symptoms include cough, sore throat, sneezing, and nasal congestion, often manifesting as a runny or blocked nose. Additionally, cold-related pain, such as headaches and backaches, is a common complaint, further contributing to patient discomfort. Despite being a self-limiting disease, the symptoms of the common cold can be disruptive to daily life. As a result, over-the-counter (OTC) medications are frequently used to manage these symptoms. OTC remedies for colds include both oral medications and topical preparations, with topical treatments being particularly favored for localized pain and symptom relief. These topical products are available in various forms such as creams, ointments, and gels, many of which contain Ayurvedic components known for their natural healing properties.

Consumer behavior studies indicate that OTC medications for pain relief, allergies, and cold/cough symptoms are among the most commonly purchased products. In particular, Ayurvedic formulations have gained substantial popularity due to growing interest in traditional and natural remedies. Recent statistics show that Ayurvedic products make up a significant portion of the OTC market, with over 25% of sales stemming from this category. Given this trend, topical Ayurvedic products, like Zandu Vaporising Cold Rub, are increasingly being used to provide relief from cold symptoms and associated pain.

This study seeks to evaluate the effectiveness of Zandu Vaporising Cold Rub, a topical Ayurvedic product, in alleviating the symptoms of the common cold, including nasal congestion, headaches, and other related discomforts.

Zandu Vaporising Cold Rub is an ayurvedic preparation that is largely composed of Camphor (8% w/w), Turpentine Oil (5.5% w/w), Eucalyptus Oil (3.5% w/w), Menthol (3.5% w/w), Base q.s. . The preparation is rubbed on to the areas - chest, throat, forehead and back, for temporary relief from cold and cough symptoms.

Zandu Vaporising Cold Rub claims to be helping in temporary relief from blocked nose, cold, congestion and headache. This study is undertaken to substantiate these claims.

## MATERIAL AND METHODS

### Study Design

This was a prospective, open-label, phase 4 study conducted using market samples of Zandu Vaporising Cold Rub. The study involved 30 subjects, aged 18-60 years, who were experiencing symptoms such as cold, congestion, headache due to cold, and body ache due to cold. Participants provided informed consent in either their mother tongue or English before being included. Individuals with preexisting conditions such as allergies, hypersensitivity, or migraine were excluded from the study.

The study was conducted over a period of two months (from September 1<sup>st</sup>, 2024, to October 31<sup>st</sup>, 2024), with subjects observed for a total of six days. Each participant was provided with a bottle of Zandu Vaporising Cold Rub (net weight: 8ml). Feedback from the participants was gathered by the investigators through a set of specifically curated questions. Responses were recorded on a visual analogue scale (VAS) ranging from 0 to 4, where 0 represented 'poor,' 1 'fair,' 2 'good,' 3 'very good,' and 4 'excellent.'

The test parameters evaluated included symptoms such as: issues related to cold, blocked nose due to cold, congestion due to cold, and headache caused by cold. These scores were collected on days 0, 2, 4, and 6. Statistical methods.

A two-tailed student t-test was carried out to find the significance of the efficacy parameters of Zandu Vaporising Cold Rub.

## RESULTS

Upon analyzing the demographic data of the subjects (refer to Tables 1 and 2), it was observed that the majority of participants were female (66.7%), while males accounted for 33.3% of the sample. The mean age of the female subjects was 41.6 years, and for males, it was 46.8 years. In terms of occupational distribution (Table 3 and Graph 1), most participants were either from the service industry (40%) or were housewives (40%).

Regarding pre-existing conditions before the study commenced (Table 4 and Graph 2), the most common symptom reported by participants was cold/nasal congestion (60%), followed by headaches due to cold (40%).

A two-tailed test for significance (Table 5) revealed a statistically significant improvement between day 2 and day 0 ( $p < 0.001$ ). Significant variations were also observed in participants' reports of headache due to cold and headache with accompanying backache on days 2, 4, and 6, as compared to day 0.

The efficacy of the product, as assessed through the visual analogue scale, is detailed in Table 6. Graph 3 shows that by day 6, 77.78% of participants rated relief from cold and congestion as 'excellent,' in contrast to day 2, when 27.78% of participants reported 'very good' and 55.56% rated the relief as 'good.'

A similar trend was observed for relief from headaches caused by cold. On day 6, 68.75% of participants reported 'excellent' relief, while 31.25% reported 'very good' relief. In comparison, on day 2, 50% of participants rated the relief as 'good,' 31.25% as 'fair,' and only 18.75% as 'very good' (Graph 4).

The overall performance of the product is presented in Table 7 and Graph 6. Day 0 was set as the baseline at 100% to measure the reduction of cold symptoms over time. The severity of cold and nasal congestion symptoms reduced from 100% on day 0 to 53.97% on day 2, 20.63% on day 4, and 6.35% on day 6. Similarly, symptoms of headache due to cold decreased from 100% to 60.71% on day 2, 21.43% on day 4, and 8.93% on day 6.

## DISCUSSION

The efficacy of the topical Ayurvedic preparation, Zandu Vaporising Cold Rub, was assessed in 30 subjects over a 6-day period. The product's performance was analyzed using visual analogue scale scores provided by participants on days 0, 2, 4, and 6. A two-tailed significance test revealed a notable reduction in cold and congestion symptoms starting from day 2 compared to day 0 ( $p < 0.001$ ). Additionally, symptoms such as headache due to cold, as well as headache with backache caused by cold, showed significant improvement on days 2, 4, and 6 compared to day 0 ( $p < 0.001$ ). This suggests that Zandu Vaporising Cold Rub effectively alleviated cold symptoms and related discomfort.

The visual analogue scores were converted into percentage distributions to better illustrate the efficacy parameters. On day 0, participants rated their cold and congestion symptoms as either fair, good, or very good. By day 6, 77.78% of participants reported 'excellent' relief from these symptoms.

For headache due to cold, the scores on day 2 were more varied, ranging from fair to good and very good. However, by day 6, 68.75% of participants reported 'excellent' improvement in their headache symptoms. These results collectively indicate that Zandu Vaporising Cold Rub significantly improves cold-related symptoms.

In addition to its specific effects on cold symptoms, the overall performance of the product was assessed by setting the initial symptom severity at 100% and observing the reduction over time. By day 6, cold and congestion symptoms had decreased to just 6.35%, while headache due to cold saw a marked reduction from 100% to 8.93%. These findings suggest a nearly tenfold reduction in cold symptoms and their associated discomfort, underscoring the product's overall effectiveness.

## CONCLUSION

The findings from this 60-day prospective open-label clinical trial on Zandu Vaporising Cold Rub indicate that the product is effective in alleviating headaches, nasal congestion, and backaches associated with cold. Regardless of the severity of the symptoms, participants in the study experienced significant relief following the use of the rub. Compliance with the treatment was excellent, and no clinically significant adverse reactions were reported. Therefore, it can be concluded that Zandu Vaporising Cold Rub is an effective remedy for temporary relief from blocked nose, cold, congestion and headache due to cold.

**RESULTS**

**Table 1: Age**

	N	Mean
Female	20	41.6
Male	10	46.8
Total	30	43.3

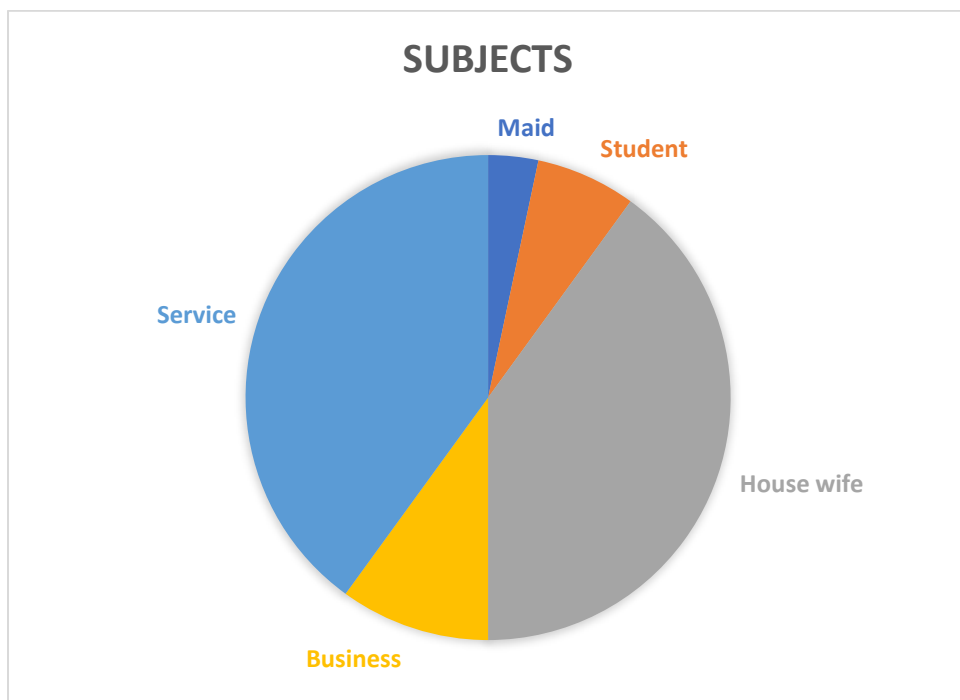
**Table 2: Gender**

	N	%
Female	20	66.7
Male	10	33.3
Total	30	100

**Table 3: occupation**

Occupation	Subjects	Percentage
Maid	1	3.33
Student	2	6.67
House wife	12	40.00
Business	3	10.00
Service	12	40.00
Total	30	100

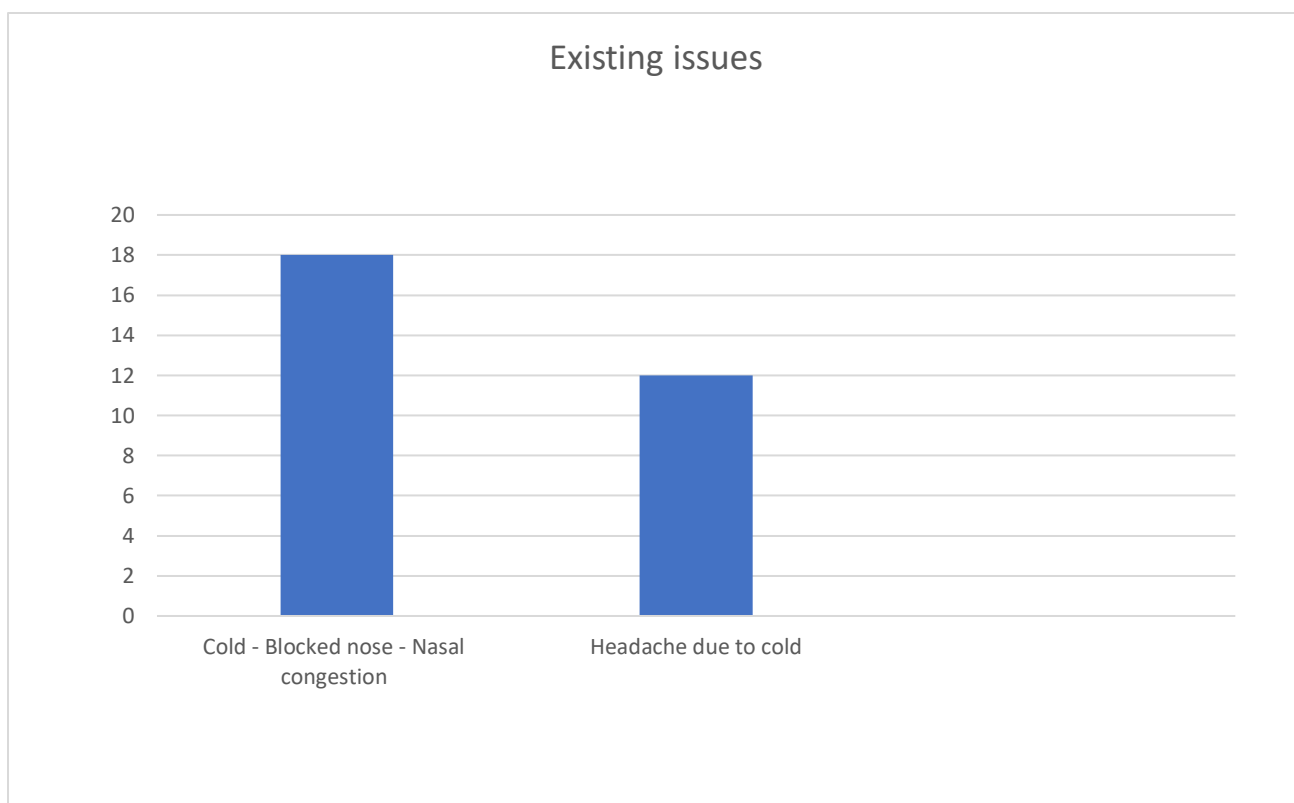
**Graph 1: Occupation**



**Table 4: Efficacy In Pain Reduction**

Existing problems	N	Percentage
Cold - Blocked nose - Nasal congestion	18	60
Headache due to cold	12	40
Total	30	100

**Graph 2: Existing Issues**



**Table 5: zandu balm ultra power efficacy parameters - test for significance**

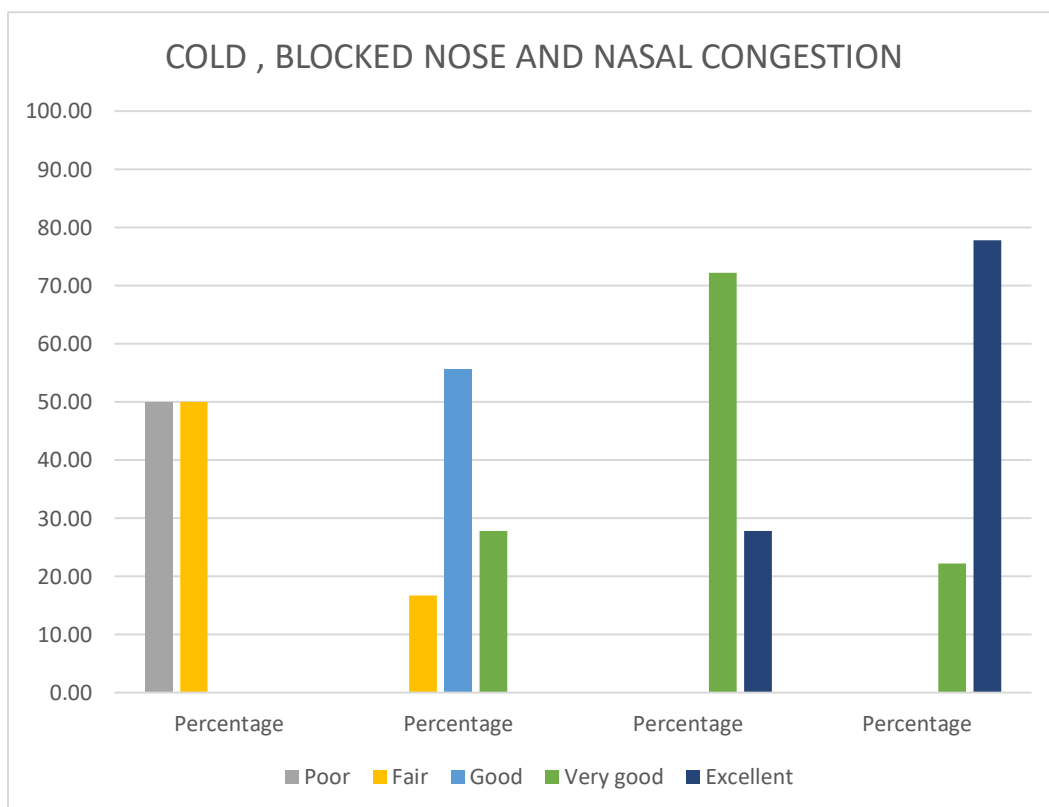
Efficacy	Cold - Blocked nose - Nasal congestion		Headache due to cold	
	T value	Sig	T value	Sig
Day 0 vs Day 2	1.407	p<0.001	1.466	p<0.001
Day 0 vs Day 4	9.197	p<0.001	0.682	p<0.001
Day 0 vs Day 6	1.071	p<0.001	0.361	p<0.001
Day 2 vs Day 4	3.620	p<0.001	2.016	p<0.001
Day 2 vs Day 6	5.025	p<0.001	1.333	p<0.001
Day 4 vs Day 6	7.103	p<0.01	3.881	p<0.05

**Table 6: Zandu Balm Ultra Power Efficacy Parameters- Percentage Distribution**

Efficacy	Day 0		Day 2		Day 4		Day 6	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Cold - Blocked nose - Nasal congestion								
Poor	9	50.00	0	0.00	0	0.00	0	0.00
Fair	9	50.00	3	16.67	0	0.00	0	0.00
Good	0	0.00	10	55.56	0	0.00	0	0.00
Very good	0	0.00	5	27.78	13	72.22	4	22.22
Excellent	0	0.00	0	0.00	5	27.78	14	77.78

Efficacy	Day 0		Day 2		Day 4		Day 6	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Headache due to cold								
Poor	8	50.00	0	0.00	0	0.00	0	0.00
Fair	8	50.00	5	31.25	0	0.00	0	0.00
Good	0	0.00	8	50.00	2	12.50	0	0.00
Very good	0	0.00	3	18.75	8	50.00	5	31.25
Excellent	0	0.00	0	0.00	6	37.50	11	68.75

**Graph 3: Efficacy Parameters – Cold and Congestion**



Graph 4: Efficacy Parameters – Headache Due to Cold

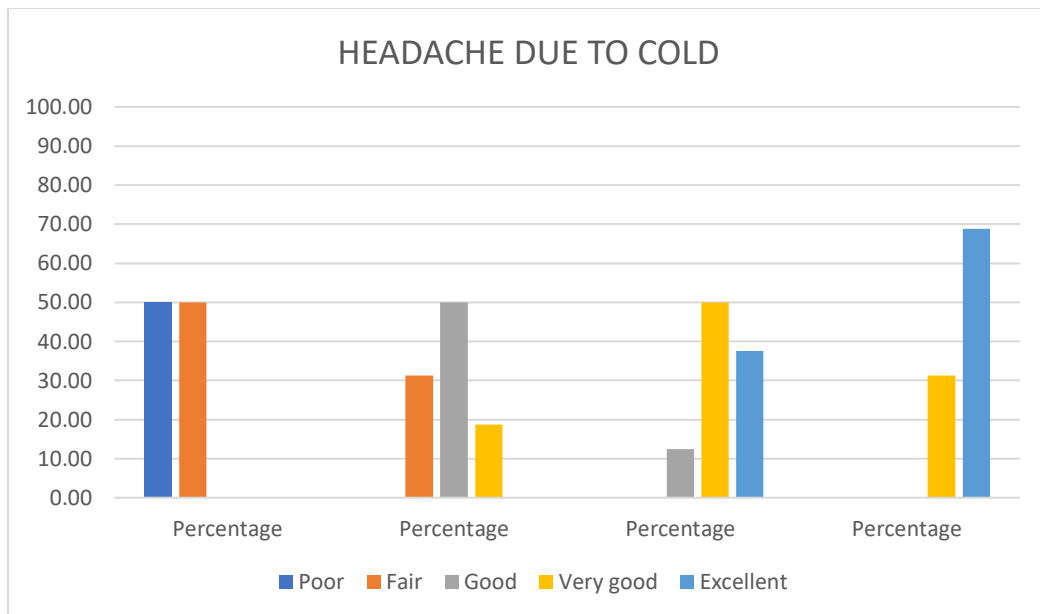
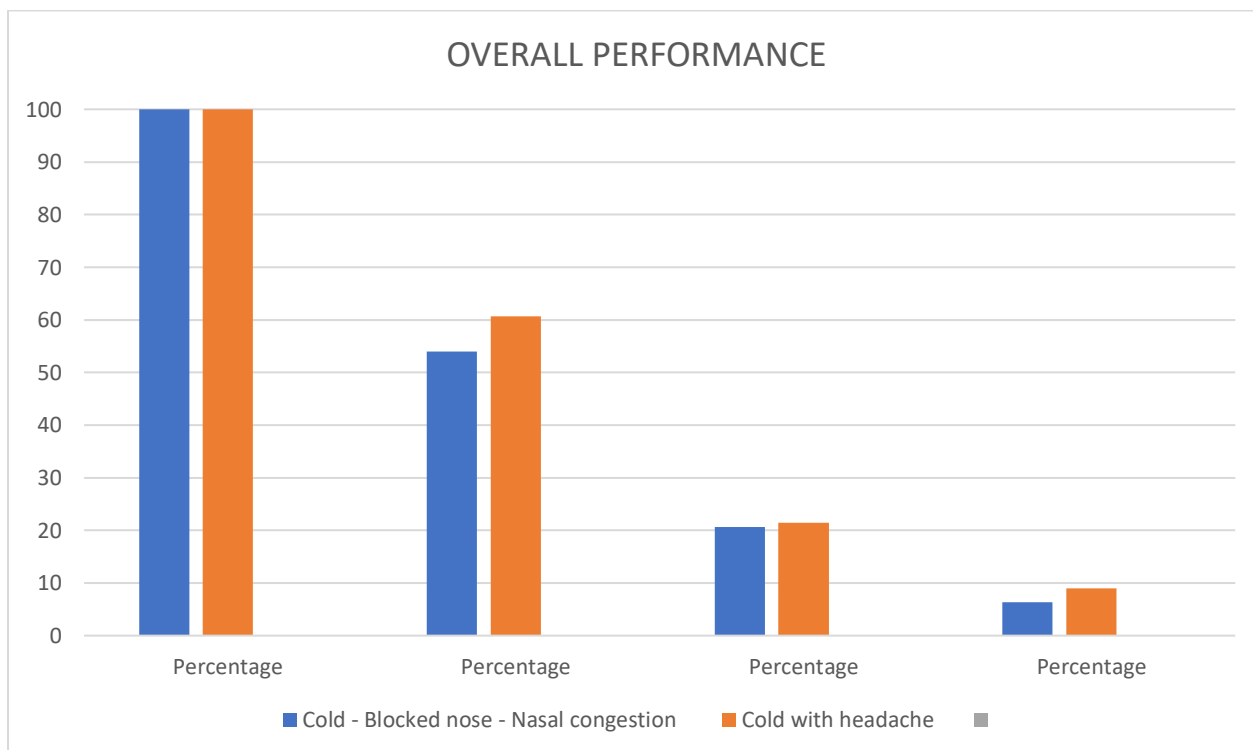


Table 7: Overall performance

Efficacy parameters	Day 0		Day 2		Day 4		Day 6	
	N	Percentage	N	Percentage	N	Percentage	N	Percentage
Cold - Blocked nose - Nasal congestion	3.50	100	1.89	53.97	0.72	20.63	0.22	6.35
Cold with headache	3.50	100	2.13	60.71	0.75	21.43	0.31	8.93

Graph 5: Overall Performance



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