



## SURVEY ON COMPARATIVE STUDY OF VARIOUS MARKETED ANTI-DANDRUFF SHAMPOO AVAILABLE IN EAST DISTRICT OF SIKKIM

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shampoo, antidandruff properties, dandruff, market survey, head & shoulders, zinc pyrithione.



### Abstract

**Purpose:** The main purpose of our study is to find most popular and effective antidandruff shampoo in East Sikkim and to know which antidandruff shampoo customers typically choose at the time of purchase based on antidandruff activity, unfavorable effects, availability, MRP, customer satisfaction, and overall shampoo quality.

**Methods:** A survey-based questionnaire is the method utilized which includes MCQs, likert scale questions.

**Results:** According to the survey which was carried out in the East district of Sikkim about antidandruff shampoo, Head & Shoulders was the most popular brand, followed by Mama earth, Himalaya, Dove, and other relevant brands.

**Conclusion:** There is no shortage in the demand for antidandruff shampoo in the market. The use of a different antidandruff shampoos shows that the consumers are concerned towards their hair problems. Head & Shoulders tops the popularity rank in terms of usage. There is high variability of Head & Shoulders products among its users. People mostly used Head & Shoulders brand products. They only switched over to another brand in case of non-availability.

### INTRODUCTION SCALP

The scalp is distinct from other human skin regions. It has a thick outer layer of skin, a high follicular density, and an abundance of sebaceous glands. Despite the fact that scalp issues are not among those that cause extreme actual disease or physical ailment, yet are of extraordinary social concern. Scalp and hair conditions have a greater amount of mental effect in human social orders.

Scalp issues incorporate parasitic and bacterial invasions that cause issues like Tinea capitis or Pediculosis capitis. There are different kinds of Scalp problems, some normal and some remarkable such as alopecia, seborrheic dermatitis, ring worm, scalp psoriasis, scalp folliculitis, head lice, dandruff [1].

### HAIR

A vital component of the human body is hair. Shape, length, diameter, texture, and colour are all variables in hair. The shape of the hair's cross section, which affects how curly it is, can also be circular, triangular, uneven, or flattened. Every mammal has hair. Its primary function is to control body temperature. A person's hair is their greatest asset, and it has a significant impact on their quality of life. In the past, hairs were thought of as a protective covering for the scalp[2].

### DANDRUFF

One of the most prevalent skin conditions in dermatology is dandruff. Dandruff is a chronic, non-inflammatory condition of the scalp marked by severe scaling of the scalp tissue [3]. Since dandruff is a naturally occurring condition, it cannot be completely eliminated. The severity of dandruff may change with the season, but it frequently gets worse in the winter. Dead skin cells shed from the scalp as a result of dandruff, which is caused by the fungus Malassezia furfur growing on the scalp due to oil and filth buildup [4].

There may be a number of etiopathologic pathways with complex mechanisms that contribute to dandruff. By way of clinical distinction, three types of dandruff exist: simple dandruff (Pityriasis simplex), oily dandruff (Pityriasis steatoides), and scales that resemble asbestos (Pityriasis amiantacea)[5].

Individuals experience different primary symptoms but the most common symptoms among all include flaking, crusting, erythema, itching, and hair loss on the scalp. At some point in their lives, over half of all people on the planet will have dandruff. Both men and women suffer from it, although it is more common in women because of the length of their hair and the need to preserve its aesthetic worth [6].

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**TREATMENT**

It is possible to treat dandruff by using one or more of the following methods:

Treatment methods comprise of the following:

A. Treatment of the Cause: Using anti-fungal medications such as Ketoconazole, Climbazole, Zinc Pyrithione, and Selenium Sulphide.

B. Treatment of the Symptoms: This includes using keratolytic drugs like salicylic acid and anti-proliferates like coal tar[1].

**SHAMPOO**

It is a preparation used to clean the hair shaft and scalp of surface grease, grime, and skin debris[7]. The most popular cosmetic item for everyday cleaning of the hair and scalp is certainly shampoo. A shampoo is a cosmetic item that cleans the hair and scalp and makes the hair shaft glossy and controllable[8].

**Table 1: Composition of shampoo**

Active ingredients	How it works	Side effects	E.g.
<b>Salicylic Acid</b>	Reduces scaling and keeps skin cells from becoming flakes, making it simpler to wipe them away.	Redness, burning, peeling	T/Sal Baker's P & S lonin plus
<b>Ketoconazole</b>	Medication that kills the Malassezia fungus.	Itching, burning, Irritation, and scalp dryness.	Nizoral 1% Nizoral 2% (prescription only)
<b>Coal tar</b>	Reduces flakes by reducing the rate at which scalp cells degenerate. They may reduce the colonization of the skin fungus (Malassezia) by minimizing flaking.	Folliculitis and irritation of fingers; in people with light-colored hair, it can cause hair discoloration and can make the scalp more sensitive to sunlight	Neutrogena T/gel
<b>Selenium sulfide</b>	Antifungal drugs that combat the malassezia fungus.	Skin inflammation and orange- brown scalp discoloration in some people; may cause scalp oiliness	Selsun blue & Head and shoulders intensive treatment

**ANTIDANDRUFF SHAMPOO**

In addition to cleansing the hair, this form of shampoo has a unique role. Shampoo typically includes an anti-dandruff ingredient in addition to other healing components like vitamins, amino acids, plant extracts, and antibacterial agents [9].

The shampoos used to treat dandruff are often categorized as chemical (synthetic) or natural based shampoos. Natural shampoos are made with herbs and other natural materials, as compared to chemical-based shampoos, which use compounds created in laboratories. Sulfur, resorcinol, selenium disulphite, zinc pyrithione, concentrated thymol, quaternary, ammonium surfactants, etc. are examples of bactericidal compounds used in synthetic shampoos [4]. Antidandruff products are designed to lessen the production of flakes of dandruff. Dandruff can be treated

using a range of "actives" that have antibacterial or anti-mitotic qualities, despite the fact that its exact source is unknown.

Advantages:

- The soothing formula of the anti-dandruff shampoo quickly soothes the irritation.
- It offers healthy hair that is completely flake-free.
- The inclusion helps to reduce irritability.
- The redness is also lessened with the anti-dandruff shampoo [10].

**METHODOLOGY**

Understanding the use of anti-dandruff shampoo in East Sikkim is the main focus of this project. The study's objective was to:

- Compare the various antidandruff shampoos available in market of East Sikkim.
- Understand which kind of antidandruff shampoo do people prefer during the purchase.
- Find most popular and effective antidandruff shampoo in East Sikkim.
- To know, which factors is actually considered while the purchase of antidandruff shampoo by the consumers.
- Additionally, focuses on searching for total number of marketed antidandruff shampoo available in India and their manufacturers along with the manufacturing location.
- Also find out how many people uses antidandruff shampoo compared to other shampoo. As a result of understanding the goal and objectives of this project work, we felt using a quantitative method of data collection would be most suitable.

The study was carried out in different places of East Sikkim.

To learn more about the preferences and viewpoints of the consumers, a questionnaire involving MCQs, likert scale questions was created and given to approximately 200 individuals representing various gender, age and sex. Data Collection took place in May and June in East district of Sikkim. Data were collected using a convenience sample in four different places in East Sikkim: Rumtek, Ranipool, Gangtok and Singtam. Participation in the survey was entirely voluntary, and by filling in the questionnaire, volunteers agreed with participation in the study.

#### RESEARCH QUESTIONS

In this situation there were no validated surveys available. As a result, a standardized questionnaire was prepared based on available literature and available questionnaire. The following issues were taken into consideration when creating the questionnaire.

1. Which anti-dandruff shampoo is most commonly used on hair?
2. What qualities do consumers look for in an anti-dandruff shampoo?
3. Why do they select this specific anti-dandruff shampoo?
4. How well does their shampoo treat dandruff?
5. How significant is the cost of shampoo to the general public?

#### QUESTIONNAIRE

- Which antidandruff shampoo do you use for your hair?
- How do you come to know about this product?
- For how long you have been using this shampoo?
- Why you choose this antidandruff shampoo?
- What is your scalp type?
- Apart from white flakes what other things do you observe on your scalp?
- Is your antidandruff shampoo effective?
- How well does this shampoo solve your problem?
- How often do you use an antidandruff shampoo?
- Have you felt any side effects after using these products? If yes, what are the side effects?
- How easily is shampoo available to you?
- Would you suggest antidandruff shampoo to your friends and relatives?
- If your choice of antidandruff shampoo was out of stock, what other product would you use?
- What pack size of antidandruff shampoo do you prefer?
- Do you prefer two-in-one products or individual function products?
- How important is the price of shampoo to you?
- Have you ever used anything other than antidandruff shampoo to treat dandruff? If yes, what?
- Past experience of any antidandruff shampoo having fake claims.
- Do you use same brand of antidandruff shampoo every time?
- Give your remarks/suggestions regarding the antidandruff shampoo

#### RESULTS

Shampoo, which includes anti-dandruff shampoo, is categorized as an FMCG (Fast Moving Consumer Goods) product is the most frequently used hair care item. New brands and variations continue to reach the market frequently as a result of its popularity and demand. Additionally, this fuels fierce competition among manufacturers for the market dominance. To maximize profit, manufacturers spend a lot of effort and money trying to sell more of their goods. These products get significant advertising in order to increase scale, and this advertising frequently affects consumers brand preference decisions. Instead of paying attention to the

content, active ingredients, and efficacy of a product, most consumers choose products with attractive packaging and better promotion.

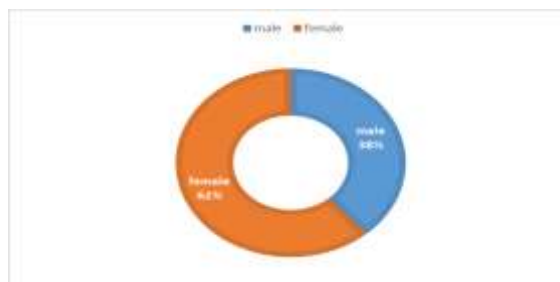
Our current work's objective is to compile a comparative analysis of popular commercial shampoos in terms of their anti-dandruff activity as well as their cleansing qualities.

We've done a survey to learn what brands consumers like among the wide range of options on the market in order to focus the analysis. Understanding consumers' preferences for the product as well as their selection criteria was the idea.

#### MARKET SURVEY

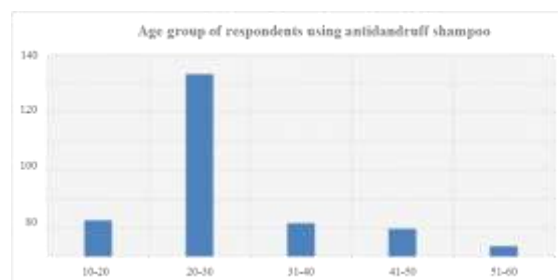
123 females and 77 males fig.1 (out of 200 respondents) made up our survey sample for the current study. Given that women have significant purchasing power and the potential to influence decisions, advertisers too frequently attempt to attract them towards a certain brand. The fact that 99 percent of respondents routinely use shampoo demonstrates its importance as one of today's basic necessities. The majority of them utilize it because of its anti-dandruff properties. Some of the most preferred brands includes following:

- Head & Shoulders
- Ketoconazole (Keraglo AD)
- Scalpe
- Patanjali
- All Clear
- Wow
- Himalaya Antidandruff Shampoo
- Mamaearth Anti-dandruff Shampoo
- Loreal Paris Ad shampoo
- Dove
- Biotique
- Kesh King
- Tresemme
- Selsun Blue
- Clinic Plus
- Forever living anti-dandruff shampoo
- Herbal essence aloe and bamboo
- Love beauty and planet
- Pantene
- Plum tea tree anti-dandruff shampoo



**Figure 1: Percentage of male and female using antidandruff shampoo.**

Figure 1 demonstrates that, out of 100 percentage, 62% of women and 38% of men used an antidandruff shampoo.

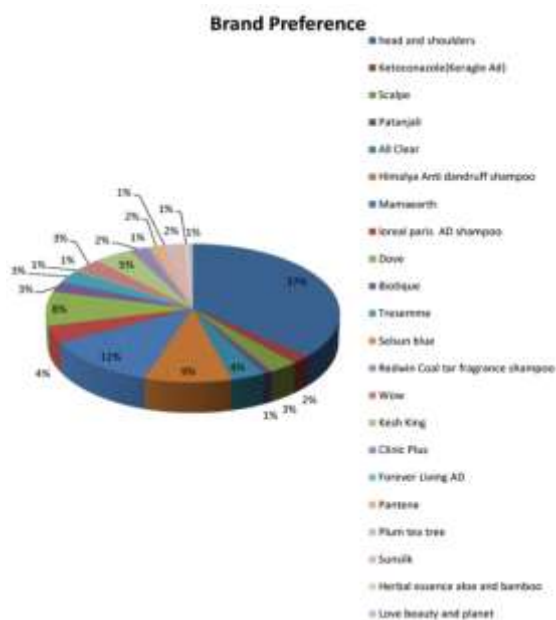


**Figure 2: Age group of respondents using antidandruff shampoo.**

The above graph (Figure 2) demonstrates that out of 200 respondents, 25 were in the 10-20 age range, 126 were in the 21-30 age range, 23 were in the 31-40 age range, 19 were in the 41-50 age range, and 7 were in the 51-60 age range.

The majority of respondents expressed satisfaction with the anti-dandruff shampoo they were using when it came to product quality. This suggests that customers are happy with the shampoo they were utilizing.

According to respondents, some expected qualities of an antidandruff shampoo are;



**Figure 3: Represents the brand preference of different antidandruff shampoo according to the respondents.**

- Should have good antidandruff properties.
- Cost should be minimum.
- Along with antidandruff properties it should provide other properties i.e., reduce hair fall, smoothness, shiny etc.

- Should be non-irritable while using.
- Should be free from harmful chemicals.
- Should have a pleasant aroma.
- Must be gentle on hair.

Although there are numerous anti-dandruff shampoo varieties on the market and people are becoming more aware of the benefits of using one for personal care, some of them, according to our survey, have never tried one. This is likely because they do not look for specific features in a shampoo.

The majority of factors that influence a layman's choice of shampoo include advertising, effectiveness, aroma, and the product's MRP. Each person has a different preference when it comes to aroma.

Ranking of all the 22 antidandruff shampoo was done on the basis of its uses among the 200 respondents:

Following is a list of how familiar 200 respondents were with a particular anti-dandruff shampoo. Based on the survey, Head and Shoulders was the anti-dandruff shampoo that the 200 respondents used the most. Following that, the second most popular anti-dandruff shampoo was mama earth tea tree antidandruff Shampoo and Himalaya Anti dandruff shampoo accordingly.

The ranking of the antidandruff shampoo on a total number of 200 respondents is given below.

**Table 2: The ranking of antidandruff shampoo based on total number of respondents**

Serial number	Brand	Used by respondents (out of 200)	Rank (according to its usage)
1	Head and shoulders	73	1
2	Mama earth	24	2
3	Himalaya	18	3
4	Dove	16	4
5	Kesh king	9	5
6	Loreal Paris	8	6
7	All clear	7	7
8	Tresemme	6	8
9	Scalpe	6	8
10	Wow	5	9
11	Biotique	5	9
12	Ketoconazole (Keraglo AD)	4	10
13	Sunsilk	4	10
14	Clinic plus	4	10
15	Pantene	3	11
16	Patanjali	2	12

17	Redwin coal tar fragrance shampoo	1	13
18	Plum tea tree AD	1	13
19	Love beauty and planet	1	13
20	Herbal essence aloe and bamboo	1	13
21	Forever living AD	1	13
22	Selsun blue	1	13

According to the survey which was performed in East Sikkim regarding antidandruff shampoo, it was found that Head and Shoulders was the most well-liked brand when compared to Dove, Tresemme, Clean and clear, and other similar brands. (Table 2)

The respondents' choice for a certain brand might be explained by its ability to clean, remove dandruff, avoid dryness, and perhaps be more affordable.

The following graph (Figure 4) represents total number of male & female using particular brand of antidandruff shampoo. As you can see, Head & Shoulders was the brand that consumers preferred the most.

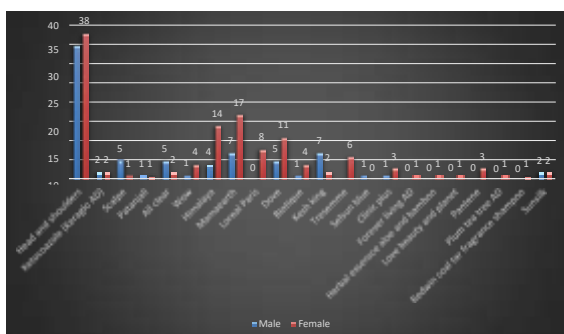


Figure 4: Represents gender (number of male & female) using particular brand of antidandruff shampoo

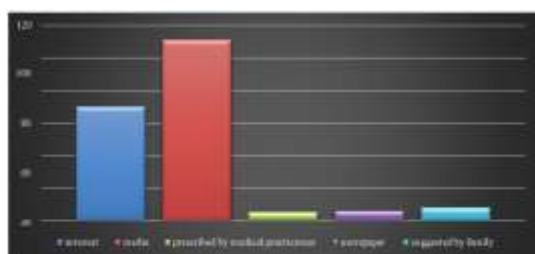


Figure 5: Source of information about the particular product.

The aforementioned graphs (Figure 5) shows that media was the primary source of information about the particular antidandruff shampoo, with 5 respondents using it because a doctor had prescribed it, whereas 8

and 70 respondents knowing about the specific product through their families and the internet, respectively.

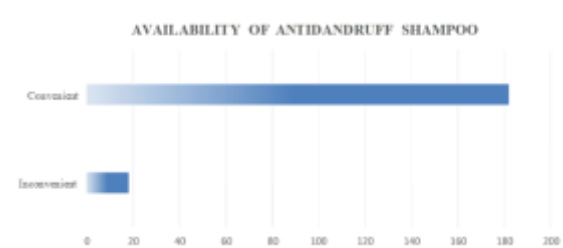


Figure 6: Availability of antidandruff shampoo according to the 200 respondents.

According to 200 respondents, 182 of them find the availability of antidandruff shampoo to be very convenient, while 18 of them find it inconvenient.

The graph (Figure 7), according to respondents, show how significant shampoo price is for them.

Only 12 respondents reported side effects from antidandruff shampoo out of 200 total respondents, leaving 188 respondents without any side effects at all. The above graph (Figure 8) illustrates the various side effects of antidandruff shampoo among these 12 respondents, which includes rough hair in 4 cases, hair loss in 5 cases, dry hair in 1 case, and hair damage in 2 cases.

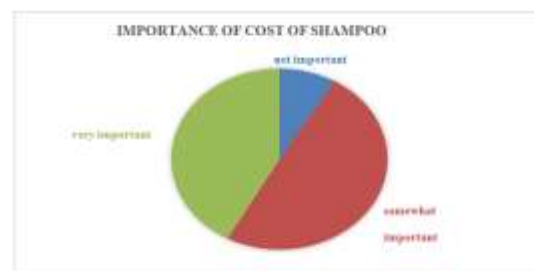


Figure 7: Importance of cost of shampoo.

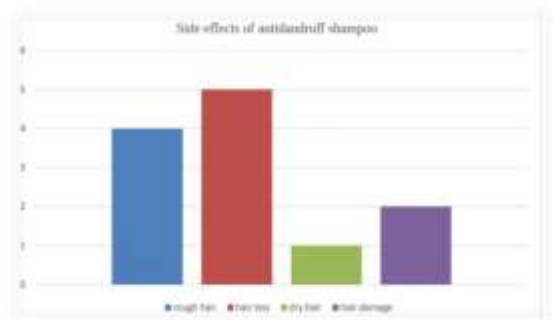


Figure 8: Side effects of antidandruff shampoo

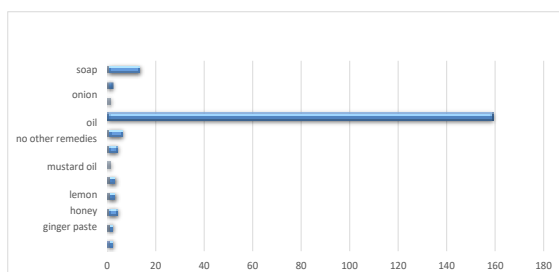


Figure 9: Other remedies besides antidandruff shampoo

The aforementioned graphs (Figure 9) demonstrate the various treatments for dandruff that respondents used in addition to antidandruff shampoo. Out of 200 respondents 2 of them used coconut oil, 4 used curd, 3 used eggs, 2 used coconut oil, 3 used ginger paste, 1 used honey, 4 used lemons, 7 used mustard oil, 2 used onions, 13 used soaps and 159 of them didn't use any additional remedies.

### CONCLUSION

In addition to having an unhealthy scalp, dandruff is a scalp problem that affects more than 50% of the population and has an impact on the social behavior of the sufferer. Since each person is different in their vulnerability to developing dandruff, so does the proper treatment strategy.

More people today are prone to developing dandruff, which can cause issues with physiology and psychology. Controlling the severity and negative effects of dandruff requires proper treatment.

Table 3: Manufacturing company of all the marketed anti-dandruff shampoo's that was covered in our survey

BRAND NAME	MANUFACTURING COMPANY
Head & shoulders	Procter and Gamble
Clinic plus Anti-dandruff Shampoo	Hindustan Unilever limited
Scalpe Anti-dandruff Shampoo	Glenmark pharmaceutical ltd
Dove Anti-dandruff Shampoo	Procter and Gamble home product private ltd
Patanjali Anti-dandruff Shampoo	Patanjali Ayurveda ltd
Himalaya Anti-dandruff Shampoo	Himalaya wellness company
Wow- Anti-dandruff Shampoo	Kapco International ltd
Mama earth Anti-dandruff Shampoo	Kapco international ltd
Kesh king Anti-dandruff Shampoo	Aj Ultra beauty care private ltd
Herbal essences aloe plus bamboo	Procter and Gamble manufacturing ltd
Redwin Anti-dandruff Shampoo	Pharmacare laboratories private ltd
Love Beauty and planet	Hindustan Unilever limited
Tresemme Anti-dandruff Shampoo	Hindustan Unilever limited
Selsun Blue Medicated	A Sanofi Company
Forever living Anti-dandruff	Aloe vera of America, Inc.
Plum tree tea Anti-dandruff	pureplay skin science pvt. Limited
Pantene Ad shampoo	Procter & Gamble Manufacturing Company
loreal Paris Ad shampoo	loreal Indian private limited
Biotique Ad shampoo	Bio Veda Action Research Company
All clear	Hindustan Unilever limited
Sunsilk	Hindustan Unilever limited
Ketoconazole (Keraglo AD)	Unnati pharmaceuticals pvt. Ltd.

The most convenient and effective way to treat dandruff is with the help of antidandruff shampoo.

The shampoos used to treat dandruff are often categorized as chemical (synthetic) or natural based shampoos. Natural shampoos are made with herbs and other natural materials, as compared to chemical-based shampoos, which use compounds created in laboratories. Sulfur, resorcinol, selenium disulphite, zinc pyrithione, concentrated thymol, quaternary, ammonium surfactants, etc. are examples of bactericidal compounds used in synthetic shampoos.

Antidandruff products are designed to lessen the production of flakes of dandruff. Dandruff can be treated using a range of "actives" that have antibacterial or anti-mitotic qualities, despite the fact that its exact source is unknown.

There is no shortage in the demand for antidandruff shampoo in the market. The use of a different antidandruff shampoos shows that the consumers are concerned towards their hair problems. However, the most preferred brand of the consumers is based on its popularity, availability, effectiveness, ability to clean, remove dandruff, avoid dryness, and perhaps be more affordable.

A survey through questionnaire was done in which it was found that the majority of respondents were satisfied with the anti-dandruff shampoo they were using when it came to product quality. This suggests that customers are happy with the shampoo they were utilizing.

According to respondents, some expected qualities of an antidandruff shampoo are:

They should have good antidandruff properties, cost should be minimum, along with antidandruff properties it should provide other properties i.e., reduce hair fall, smoothness, shiny etc., should be non-irritable while using, should be free from harmful chemicals, should have a pleasant aroma, and must be gentle on hair.

According to our survey, we discovered that there were more female users as compared to male

i.e. out of 200 respondents, 123 were female and 77 were male in the east district of Sikkim. Along we that, we learned that most people who used antidandruff shampoo were between the age group of 21-30. The consumer's primary source of information regarding a specific antidandruff shampoo was the media, which was followed by the internet, family recommendations, newspaper articles, and doctor's prescriptions. Only 12 of the 200 respondents who responded to the survey

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had any adverse effect, leaving 188 respondents unaffected. Hair loss was the most frequent adverse effect, and then there were others including rough hair, dry hair and hair damage.

Along with antidandruff shampoo, the respondents utilized a variety of other remedies for dandruff, including coconut oil, mustard oil, curd, egg, ginger paste, honey, lemon, onion, and soaps.

Head & Shoulders tops the popularity rank in terms of usage. There is high variability of Head & Shoulders products among its users. People mostly used Head & Shoulders brand products. They only switched over to another brand in case of non-availability.

Mama earth, Himalaya, and Dove were the other popular antidandruff shampoos in addition to Head & Shoulders.

Marketing is considered to be the heartbeat of an organization. Therefore, we can say that Head & Shoulders firm has done its job excellently.

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#### **CONSENT FOR PUBLICATION**

The authors declare no conflict of interest.

#### **COMPETING INTERESTS**

The authors declare that they have no competing interests.

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