

Original Research Article

A consumer-based survey study on Mintop shampoo in women with hair fall

Monil Yogesh Neena Gala^{1*}, Snehal Muchhala¹, Akhila Paspulate¹, Rahul Rathod¹,
Krishna Veligandla¹, Biswajit Aich¹, Arti Sanghavi¹, Nilesh Guhe², Bhavesh P. Kotak¹

¹Department of Medical Affairs, Dr. Reddy's Laboratories, Hyderabad, Telangana, India

²Department of Formulation Research and Development, Dr. Reddy's Laboratories, Hyderabad, Telangana, India

Received: 03 July 2023

Revised: 31 July 2023

Accepted: 09 August 2023

*Correspondence:

Dr. Monil Yogesh Neena Gala,

E-mail: monil.yogesh@drreddys.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Consumers worldwide are concerned about their diet, health, lifestyle, and hair care. Considering hair care is a crucial part of daily beauty routines, this survey aims to evaluate the effects of Mintop Shampoo (containing Procapil 1% and Redensyl 1%) in women with hair fall.

Methods: A total of 165 females were enrolled in the survey, as per the study inclusion/exclusion criteria. Mintop shampoo (test product) was provided to the study participants and were instructed to use the product at home for a period of 30 days. The data was collected using a Consumer survey Questionnaire. A self-assessment questionnaire was filled out at the end of the survey and collected from participants. The percentage of participants reporting top 3 scores (on a 5-point scale) was considered for data analysis.

Results: 93.33 % of participants agreed that the product was effective in slowing down hair fall, and 93.94% of participants agreed that the product was effective in reducing the dryness of hair. 93.94% of participants agreed that the product was effective in improving dull hair to full-life hair (Bounce and Volume). 93.33% of participants agreed that the product was effective in improving the strength of hair.

Conclusions: Present study results demonstrated that Mintop shampoo was effective in improving the strength of hair, reducing dryness of hair, and aids slowing down hair fall. Also, no adverse events or Serious Adverse events were reported in the study.

Keywords: Hair fall, Hair loss, Alopecia, Procapil, Redensyl, Mintop

INTRODUCTION

Hair fall or Alopecia refers to the loss of hair from the head.^{1,2} The hair life cycle comprises a cycle of growth, shedding, and replacement with around 50 to 100 hair loss per day as part of the normal physiological balance.³ Hair fall is a common disorder that affects women of all ages, and about 50% of women suffer from hair loss by age 40.⁴ Disturbances of hair growth with visible hair loss can be a burden on self-esteem and the quality of life of those

affected.⁵ Hair loss can be divided into scarring and non-scarring. The most common type of non-scarring type is androgenetic alopecia.⁶ Androgenetic alopecia (AGA) is also referred to as pattern hair loss.⁷ Female pattern hair loss (FPHL) is characterized by a diffused reduction in hair thickness and is a common cause of hair loss in women along with Telogen Effluvium.⁸ Female hair loss is typically caused by stress, medication, changing hormones, and even menopause. Furthermore, many hair styling products (chemicals/excessive heat) can cause hair

loss. Women tend to lose hair from the top and crown of the scalp but will not end up with complete baldness like men. Great expectations are associated with pharmaceutical formulations like shampoos, hair oils, biotin supplementation, and other cosmetic therapies in hair loss management despite having a lack of quality clinical evidence.⁹ Traditional therapy like Hair oils has been used on the scalp with the belief that in the long run, it might prevent hair loss, add thickness to the hair, bring shine, and prevent greying of the hair. Hair oils can play various roles, such as antibacterial, antifungal, anti-inflammatory, emollient action, preventing protein loss, protecting against ultraviolet (UV) damage, elasticity, moisturizing effect, and nourishing effect.¹⁰

Biotin (also known as vitamin H or B7) is a water-soluble vitamin that serves as an essential cofactor for carboxylase enzymes in multiple metabolic pathways. The role of biotin in protein synthesis and, more specifically, in keratin production, explains its contribution to healthy nail and hair growth. It is an alternative medication used in the management and treatment of pathological hair conditions, however, lacks quality clinical study evidence.^{11,12} Platelet-rich plasma therapy has become a popular treatment for hair regrowth. Activated platelets release numerous growth factors and cytokines from their alpha granules as part of the wound-healing process. Platelets in PRP become activated when injected into the scalp and release multiple growth factors, which promote hair growth.¹³

Shampoo is a hair care product designed to clean the scalp skin along with its hair. It is made with a variety of components, including detergents, conditioners, thickeners, sequestering agents, pH adjusters, preservatives, and specialty additives. Hair conditioners are designed to improve hair manageability, decrease hair static electricity and add luster.¹⁴ Shampoos are used to remove sweat, sebum, desquamated cells, styling products, and environmental dirt from the hair. Regular Shampoo benefits include softening hair, promoting hair development, and preventing rough hair.^{15,16} Currently, there are very few drugs or therapies for treating hair loss, especially in women, but their side effects have reduced their usage. Therefore, it is essential to explore newer molecules with either of synthetic or plant origin without having any side effects. Procapil contains three extremely effective plant-derived components, such as oleanolic acid, which is extracted from olive leaves; apigenin, which is a flavonoid extracted from citrus peel; and biotin. Redensyl is a combination of four active ingredients: Dihydroquercetin-glucoside (DHQG), epigallocatechin gallate-glucoside (EGCG2), glycine, and zinc (Table 1).¹⁷ The present consumer survey study aims to evaluate the effects of Mintop Shampoo in women for slowing down hair fall, reducing dryness of hair, improving dull hair to full-of-life hair (Bounce and Volume), and improving the strength of hair. Mintop shampoo has Procapil 1% and Redensyl 1% (Table 1).

METHODS

After obtaining approval from the Institutional Ethics Committee, a single-arm, monocentric, consumer-based survey study was conducted to evaluate the effects of Mintop Shampoo on women with hair fall. Informed consent was obtained from all the study participants and enrolled in the survey study as per the study inclusion and exclusion criteria. The inclusion criteria were voluntary participation by women between the age groups of 18 and 55 years, those who self-declared having hair fall, dry and damaged hair, and agreed to use only shampoo provided by the sponsor in the study.

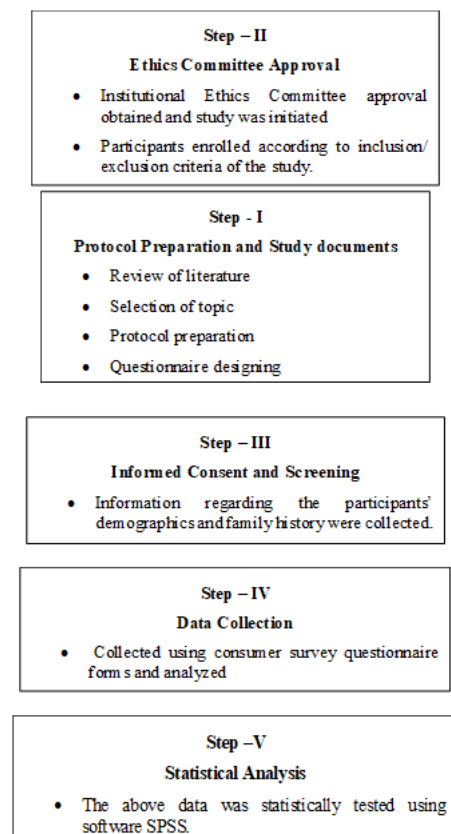


Figure 1: Study process flow.

Approximately 5ml of shampoo was to be applied and massaged on the wet scalp. After keeping it on the hair for 2-3 mins, the hairs were washed with water. The product was used thrice a week. The study exclusion criteria were, participants who were allergic to any cosmetic product, pregnant women or lactating mothers, any clinical hair condition for which treatment is being taken, history of thyroid disorders, anaemia, or hormonal problems, participants who had Covid-19 infection during the past 6 months and participants who had a fever and prolonged illness recently shall not be considered for this study. A total of 165 female participants were included, and the duration of the study period lies between July 6, 2022, and August 24, 2022.

Table 1: Role of ingredients in Mintop shampoo.

Mintop Shampoo (Procapil 1% and Redensyl 1%)	
Procapil (contains three extremely effective plant-derived components)	
Active ingredient	Role
Oleanolic acid	Inhibits 5 α 1 and 5 α 2 reductase enzymes, inhibits the production of Dihydrotestosterone
Apigenin	microcirculation into the hair follicles
Biotin	forms biotinyl-GHK (a vitamin-carrying peptide)
Redensyl (combination of botanical ingredients)	
Dihydroquercetin Glucoside (DHQG)	target and stimulate fibroblasts in the outer root sheath stem cells and dermal papilla
Epigallocatechin Gallate glucoside (EGCG2)	target and stimulate fibroblasts in the outer root sheath stem cells and dermal papilla
Glycine	hair metabolism
Zinc	hair metabolism, binding of cysteines in keratin

The first participant’s first visit (FPFV) was on 6 July 2022, the first participant’s last visit (FPLV) was on 5 August 2022, the last participant’s first visit (LPFV) was on 26 July 2022 and the last participant’s last visit (LPLV) was on 24 August 2022. All the study participants were provided with Mintop shampoo and instructed to use the product at home for a period of 30 days. A Self-assessment questionnaire will be filled out and collected from participants at the end of the survey period. Data was collected and analyzed by using the software SPSS (Figure 1).

RESULTS

A total of 165 female subjects participated in this study, with a mean age of 22 years, SD 8.39, and an age range was 18 to 53 years (Table 2).

Table 2: Demographic data (n=165).

Parameters	
Age (years)	
Mean	22.00
SD	8.39
Range	18 years to 53 years

Consumer feedback

The study results demonstrated that using Mintop shampoo for a month had a significant effect on slowing down hair fall in the study participants. As shown in Table 3, 93.33% of participants had successful results, 5.45%

had results that were not very effective, and 1.21% had results that were ineffective (Table 3).

Table 3: Percentage of participants agreeing/disagreeing that the product slowed down hair fall after 1 month of use of Mintop shampoo (n=165).

Assessment	Proportion of participants that product slowed down hair fall	
	N	%
Not effective at all	2	1.21
Not very effective	9	5.45
Somewhat effective	37	22.42
Very effective	91	55.15
Extremely effective	26	15.76
Effective results (somewhat+very+extremely)	154	93.33

Table 4: Percentage of participants agreeing/disagreeing that the product reduced dryness of hair after 1 month of use of Mintop Shampoo (n=165).

Assessment	Proportion of participants that product reduced dryness of hair	
	N	%
Not effective at all	1	0.61
Not very effective	9	5.45
Somewhat effective	29	17.58
Very effective	93	56.36
Extremely effective	33	20.00
Effective results (somewhat+very+extremely)	155	93.94

The study results demonstrated that using Mintop shampoo for a month had a significant effect on reducing the dryness of hair in the study participants. As shown in (Table 4), 93.94% of participants had effective results, 0.61% had results that were not effective at all, and 5.45% had results that were not very effective (Table 4).

The study results demonstrated that using Mintop shampoo for a month had a significant effect on improving dull hair to full-life hair (Bounce and Volume) in the study participants. As shown in Table 5, 93.94% of participants had effective results, 1.21% had results that were not effective at all, and 4.85% had results that were not very effective (Table 5). The study results demonstrated that using Mintop shampoo for a month had a significant effect on improving the strength of the hair of the study participants. As shown in Table 6, 93.33% of participants had effective results, 1.21% had results that were not effective at all, and 5.45% had results that were not very effective (Table 6). After the use of Mintop shampoo, none

of the participants reported any adverse events or serious adverse events throughout the study period.

Table 5: Percentage of participants agreeing/disagreeing that the product improves dull hair to full life hair (Bounce and Volume) after 1 month of use of Mintop Shampoo (n=165).

Assessment	Proportion of participants that product improves dull hair to full life hair (Bounce and Volume)	
	N	%
Not effective at all	2	1.21
Not very effective	8	4.85
Somewhat effective	34	20.61
Very effective	85	51.52
Extremely effective	36	21.82
Effective results (somewhat+very+extremely)	155	93.94

Table 6: Percentage of participants agreeing/disagreeing that the product improves strength of hair after 1 month of use of Mintop Shampoo (n=165).

Assessment	Proportion of participants that product improves strength of hair	
	N	%
Not effective at all	2	1.21
Not very effective	9	5.45
Somewhat effective	43	26.06
Very effective	77	46.67
Extremely effective	34	20.61
Effective results (somewhat+very+extremely)	154	93.33

DISCUSSION

Herbal products seem to be safe, effective, and widely used for hair growth since ancient times in Ayurveda, Chinese, and Unani systems of medicine.⁹ Mintop shampoo has naturally derived ingredients to manage hair fall problems, and it is a promising option to help control hair fall in women.

D'Souza et al stated that shampoo not only provides the cleaning of the scalp skin and hair as its primary function but in addition, also serves to condition and beautify hair and acts as an adjunct in the management of various scalp disorders. Therefore an ideal shampoo is supposed to have a secondary function which serves to condition and beautify hair.¹⁰ Similarly the results of the present study revealed that Mintop shampoo was effective in hair conditioning such as helping slow down hair fall,

improving dull hair to full-life hair (Bounce and Volume), the strength of hair, and reducing dryness of hair.

Ragavendran et al, Bhimani et al and Firmansyah et al study results demonstrated that consumers prefer and select shampoos based on their benefits, performances, and quality.¹⁸ Similarly, the present study demonstrated that Mintop shampoo was effective in improving hair strength, reducing hair dryness, and aids slowing down hair fall. Trueb et al stated that currently available shampoo formulations are adapted to the variations associated with hair quality, hair care habits, and specific problems related to the superficial condition of the scalp.¹⁹ From the results of the present study, it was observed that the quality of hair improved significantly after one month of use of Mintop shampoo. Priya et al stated that shampoo products should not adversely affect the scalp and hands or cause irritation to the eyes.²⁰ The present survey study findings revealed that there were no adverse effects or serious adverse effects reported with the usage of Mintop shampoo.

Limitations

This study has a few limitations. There may be a chance of receiving biased information from the consumer while getting the data through the questionnaire method. The study was conducted only on women, and the collected data belongs to the age group of 18 to 53 years.

CONCLUSION

Based on the consumer survey feedback study, Mintop shampoo provides clinically significant benefits to female subjects with hair fall problems. The study results demonstrated that Mintop shampoo is safe and effective in helping reducing hair fall, and dryness of hair, improving dull hair to full-life hair (Bounce and Volume) and the strength of hair. Mintop shampoo contains active ingredients Procapil 1% and Redensyl 1% that promote hair growth possibly by their proliferative and anti-apoptotic effect on dermal papilla cells, as well as by inhibiting 5α reductase. Therefore, Mintop shampoo appears to provide a viable adjunct option for the unmet need for an effective, safe, and well-tolerated treatment for women’s hair falls.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. AlGhamdy S, AlGarni B, Albukhari F. Attitude and practice regarding the use of multiivitamins for hair fall: Cross sectional study in Saudi Arabia. *Egypt J Hospital Med.* 2018;73(6):6838-3.

2. Kumari M, Sharma A, Porte SM. Ayurvedic method of diagnosis, prevention and cure of hair fall (alopecia). *World J Pharma Res*. 2018;7(03):1491-501.
3. Nascimento IJB, Harries M, Rocha VB, Thompson JY, Wong CH, Varkaneh HK, et al. Effect of Oral Minoxidil for Alopecia: Systematic Review. *Int J Trichol*. 2020;12(4):147-55.
4. Sawarkar S, Deshmukh V, Jayaganesh S, Perumal O. Clinical Evaluation of Cactus (*Cereus Grandiflorus*) Enriched Hair Oil for Hair Fall Disorders. *Madridge J Dermatol Res*. 2018;3(1):61-4.
5. Blume-Peytavi U, Kunte C, Krisp A, Garcia Bartels N, Ellwanger U, et al. Comparison of the efficacy and safety of topical minoxidil and topical alfatradiol in the treatment of androgenetic alopecia in women. *J Dtsch Dermatol Ges*. 2007;5(5):391-5.
6. Al Aboud AM, Zito PM. Alopecia. Treasure Island (FL): StatPearls Publishing; 2022.
7. Choe SJ, Lee S, Choi J, Lee WS. Therapeutic Efficacy of a Combination Therapy of Topical 17 α -Estradiol and Topical Minoxidil on Female Pattern Hair Loss: A Noncomparative, Retrospective Evaluation. *Ann Dermatol*. 2017;29(3):276-82.
8. Zhuang XS, Zheng YY, Xu JJ, Fan WX. Quality of life in women with female pattern hair loss and the impact of topical minoxidil treatment on quality of life in these patients. *Exp Ther Med*. 2013;6(2):542-6.
9. Semalty M, Semalty A, Joshi GP, Rawat MS. Hair growth and rejuvenation: an overview. *J Dermatol Treat*. 2011;22(3):123-32.
10. Mysore V, Arghya A. Hair Oils: Indigenous Knowledge Revisited. *Int J Trichol*. 2022;14(3):84-90.
11. Patel DP, Swink SM, Castelo-Soccio L. A Review of the Use of Biotin for Hair Loss. *Skin Append Disord*. 2017;3:166-9.
12. Bistas KG, Tadi P. Biotin. Treasure Island: StatPearls Publishing; 2022.
13. Ashique S, Sandhu NK, Haque SN, Koley K. A systemic review on topical marketed formulations, natural products, and oral supplements to prevent androgenic alopecia: a review. *Nat Product Bioprospect*. 2020;10:345-65.
14. D'Souza P, Rathi SK. Shampoo and Conditioners: What a Dermatologist Should Know? *Indian J Dermatol*. 2015;60(3):248-54.
15. George NM, Potlapati A. Shampoo, conditioner and hair washing. *Int J Res Dermatol*. 2022; 8:185-91.
16. Zhang A. Effect of shampoo, conditioner and permanent waving on the molecular structure of human hair. *J Dermatol*. 2015;3:e1296.
17. Karaca N, Akpolat ND. A Comparative Study between Topical 5% Minoxidil and Topical "Redensyl, Capixyl, and Procapil" Combination in Men with Androgenetic Alopecia. *J Cosmo Trichol*. 2019;5:140.
18. Khanam US, Rahman MB. Preference of Global Shampoo Brands: A Study on Women Consumers. *J Social Sci*. 2022;10:241-54.
19. Trüeb RM; Swiss Trichology Study Group. The value of hair cosmetics and pharmaceuticals. *Dermatology*. 2001;202(4):275-82.
20. Priya JS, Nagapallavi B, Usharani B, Simhachalam B, Srikanthreddy Y. Biosynthesis and New Technique For The Formulation Of Hair Growth Shampoo. *J Positive School Psychol*. 2022;6(6):8287-95.

Cite this article as: Gala MYN, Muchhala S, Paspulate A, Rathod R, Veligandla K, Aich B, et al. A consumer-based survey study on Mintop shampoo in women with hair fall. *Int J Res Dermatol* 2023;9:257-61.