

# A Study on Awareness and Attitude of Female College Going Students towards Use of Herbal Cosmetic Products in Central Kashmir, Kashmir

Bilal Ahmad Bhat<sup>1</sup>, Syed Sabahat Ashraf<sup>2</sup>, Farhana Shaheen<sup>3</sup>, Nusrat<sup>4</sup>,  
Naveena Nazim<sup>5</sup>, Sadiqa Shafiq<sup>6</sup>

<sup>1</sup>Division of Social Science, Faculty of Fisheries, Rangil Ganderbal, SKUAST-Kashmir, J&K

<sup>2</sup>Regional Research Institute Of Unani Medicine, Naseem Bagh Campus, *University of Kashmir*, Hazratbal, Srinagar, Kashmir, J&K

<sup>3</sup>Department of Zoology, University of Kashmir, Hazratbal, Srinagar, Kashmir, J&K

<sup>4</sup>IMFA, University of Kashmir, Hazratbal Srinagar-190006, J&K

<sup>5</sup>College of Temperate Sericulture-Mirgund, SKUAST-Kashmir, Post Box No.674, GPO-Srinagar Kashmir, J&K

<sup>6</sup>Institute of Home Science, University of Kashmir, Hazratbal, Srinagar, Kashmir, J&K

Corresponding Author: Bilal Ahmad Bhat

## ABSTRACT

**Introduction:** The desire for good looks since the dawn of history has been part of human life. Worldwide as per the available literature people were using cosmetics for health benefits. There is an increase in the newer products and availability of cosmetics along with an increase in its usage and associated side-effects. The present study was conducted with a view of assessing awareness and attitude of female college going students towards use of traditional cosmetics in Central Kashmir, Kashmir.

**Material and Methods:** A cross-sectional study was conducted among the female College going students of Jammu and Kashmir. The survey was conducted during 2018-19 in different colleges of Jammu and Kashmir. A well designed validated questionnaire was used to collect the data at random from 400 female students using stratified random sampling technique.

**Results:** 400 female College going students participated in the present study. It was reported that majority (45.5% Science stream, 36.5% Arts stream) of the respondents were of the opinion that use of cosmetics enhanced their personality. Further, majority (72.5% Science stream, 68.5% Arts stream) respondents preferred natural cosmetics as they believe they are having no side effects. The respondents for beauty advice follow Beauticians (6.5% Science

stream, 5.0% Arts stream), Print/Electronic Media (35.5% Science stream, 38.5% Arts stream), Dermatologist (24.5% Science stream, 21.5% Arts stream) and Friends (33.5% Science stream, 35.0% Arts stream). The respondents in majority told that they spend Rs 150-250 per month for cosmetics (45.5% Science stream, 48.0% Arts stream).

**Conclusion:** In general people have started utilizing cosmetic products seriously throughout the world. The uses of Herbal cosmetics are gaining preference over the years and the occurrence of adverse reactions because of other cosmetics showed a growing trend towards herbal ones. The traditional cosmetic uses enhance physical and mental well-being, strengthen the immune system, increase stamina and reduce fatigue etc. The results of our study showed that advertisements are very helpful in creating the awareness among the female college going students but they are failed to build strong perceptions in the mind of consumers.

**Keywords:** Cosmetics, Students, Herbal Cosmetics, Kashmir, Statistics

## INTRODUCTION

The word, "Cosmetics" derived from the Greek word "kosm tikos" meaning having the power, arrange, skill in decorating (Pandey, Meshya and Viral,

2010) is well-known to human being since ages and the desire to look good and beautiful for every individual can be identified as the psychological need having been given the upper place in hierarchy for ages. It is reported (Kapoor, 2005) that man in prehistoric times 3000 B.C. used colours for decoration to attract the animals that he wished to hunt and also the man survived attack from the enemy (whether man or animal) by colouring his skin and garlanded his body for protection to hassle fear in an enemy. It is important to understand the correct meaning of the word “cosmetic” from various sources at the beginning. The word “cosmetic” according to dictionary published on website, is a noun and includes “powder, lotion, lipstick, rouge or other preparation for beautifying the face, skin, nails, hair etc.” The second sense in noun category is “cosmetics: superficial measures to make something appear better, more attractive or more impressive.” Beauty is a part of aesthetics and cultural aspects of any social set up. With evolving times, the weight ages given to ones beauty has increased manifolds and so are the cosmetic products used in maintaining a person's beauty. In the modern society, the wish for good looks is continuously evolving as one of the basic needs of human beings worldwide. Women folk, in particular are expressing themselves through makeup for positive images of aesthetic appearance and

the advance of mass media in the fast changing society is causing the attention in makeup to expand ever more. The makeup starting age of teenagers who have come into contact with a range of media and Internet environment early is regularly increasing as the exchange and spread of information on makeup becomes faster and broader throughout the world. The extent of usage of Cosmetics by a girl is normally conditioned by the lifestyle of a girl as more stylish girl may go for more items of Cosmetics while those girls with traditional culture may shun wide usage of cosmetics in their life. The attributes like family income level, age of girl, area of residence, marital status, may have their influence upon the level usage of cosmetics. For example, as girls grow up in age, she would tend to look elegant for which purpose she may lay her hands upon cosmetics like face cream, talcum powder, eye guard, lip stick and so on. A huge mass of literature exists on how one can enhance Self-Confidence i.e., practicing yoga, doing exercises, having positive attitude all help to have confidence in oneself. A Dress makes half man, goes the saying. However strong one may be, internally, still if it is not exposed accurately through external posture then the internal power may turn into of no use to one. The plants used as cosmetics for skin care, hair care and dental care as reported in literature are listed below in Table 1:

**TABLE 1: BOTANICALS USED FOR SKIN CARE, HAIR CARE AND DENTAL CARE**

S.No.	Botanical name / Family	Common name	Chemical constituent	Uses
1.	<i>Acacia concinna</i> Mimosaceae	Shikakai	Lupeol, spinasterol, lactone, hexacosanol, spinasterone, calyctomine, racimase-A oleanolic acid, lupenone, betulin, betulinic acid, betulonic acid	The pods extract is used as hair cleanser and for control of dandruff.
2.	<i>Achyranthes aspera</i> Amaranthaceae	Puthkanda	$\beta$ -pinene, sabinene, germacrene-D, estragole, linalool	The root is used as a toothbrush, good for dental caries.
3.	<i>Adhatoda vasica</i> Acanthaceae	Vasaca	Vasicine, vasicine acetate, 2-acetyl benzyl amine, vasicinone, quinazoline	For skin affection and control of scabies fresh leaves juice / extract is used
4.	<i>Ailanthus excels</i> Simaroubaceae	Maharukh	Apigenin, luteolin, kaempferol, quercetin	Leaves extract checks skin eruption and useful in skin creams and lotions
5.	<i>Allium sativum</i> Alliaceae	Garlic	Llicin, phytoncidea, alliin, ajoene, isoalliin, methiin, alliin	To control sores, pimples and acne Garlic oil is used. In skin lotions and creams it may be used.
6.	<i>Aloe vera</i> Liliaceae	Ghikanwar	Hydroxyanthroquinone – barbaloin, y –	Leaves juice, its pulp or

			hydroxyaloin isomers, aloe emodin, chrysophanol, loins, Barbaloin, Isobarbaloin, Aloin	extracted material is applied on skin for smoothness, healing controlling skin burn, sun burn and injury Used in moisturizers, lotions, creams, hair tonic, shaving creams, etc
7.	<i>Andropogon muricatus</i> Poaceae	Khas	Vetiselinenol, khusimol, sesquiterpenoids- vetidiol	To cure irritated skin and allergies, powdered root paste with red sandal wood is used.
8.	<i>Argemone mexicana</i> Papaveraceae	Kandayi	Dehydrocorydalmine, jatrorrhizine, columbamine, oxyberberine	The pulverized seeds good for gum troubles.
9.	<i>Arnica montana</i> Asteraceae	Arnica	Helenalin, 11 $\alpha$ , 13-dihydrohelenalin	The flowers extract is used in hair oil as a tonic material. It stimulates the hair follicles.
10.	<i>Azadirachta indica</i> Meliaceae	Neem	Di-n-propyl disulfide, 1-cinnamoylmelianolone, Isonimolicinolide, nimolicinoic acid	It is useful in curing wounds, skin diseases, leprosy, ulcers etc. Bark, seed, fruits and leaves contain diterpenes and highly oxidized tetraner warmer parts triterpenoids including azadirachtin, antiseptic agent.
11.	<i>Berberis lycium</i> Berberidaceae	Kashmal	Berberine, berbamine, palmatine	The peeled stem considered good for scouring teeth.
12.	<i>Betula pendula</i> Betulaceae	Birch	Carotenoid, Rubisco, uronic acids, lignin	The extract of leaves is used as anti-dandruff.
13.	<i>Boehmeria platyphylla</i> Urticaceae	Handa	Cypholophine, O-acetylcypholophine, lactone, loliolide	For scouring teeth leaves are used.
14.	<i>Brassica spp.</i> Brassicaceae	Mustard	Quercetin, predominate, kaempferol, luteolin, apigenin indole-3-carbinol	The seed oil is used as hair oil and useful for hair nourishment.
15.	<i>Butea frondosa</i> Fabaceae	Dhak	6, 8 di-C-rhamnosyl apigenin, luteolin, Chrysoeriol 7-O- $\beta$ -D-4C1-glucuronic acid	The leaves extract is useful in pimples and seed extract for fungal infection and bruises.
16.	<i>Calotropis procera</i> Asclepiadaceae	Ak	Calotropin, calotoxin, calactin, uscharidin, voruscharin, calotropagenin	The latex used for toothache due to dental caries.
17.	<i>Carica papaya</i> Caricaceae	Papaya	Papain, chymopapain, carpain, carpasemine, benzyl isothiocyanate	The milky juice of unripe fruit is a good ingredient for facial and face cream; fruit pulps make skin soft and remove blemishes
18.	<i>Carya illinoensis</i> Juglandaceae	Kagji-khod	Fatty acid, sucrose, protein, fiber, aluminum, vitamin C	The leaves used for scouring teeth and it is good for gums.
19.	<i>Cassia occidentalis</i> Fabaceae	Relu	Lenoleic acid, Galactomannan, Torosaflavon B, singueanol I, Questin, Methylgermitorosone, Helminthosporine	For scouring teeth, leaves are used.
20.	<i>Cassia tora</i> Caesalpiniaceae	Panwar	Anthraquinone, naphthopyrone glucoside	For skin infection, ringworm, eruption, etc leaves and seed extract are used.
21.	<i>Citrus limon</i> Rutaceae	Nimbu	Limonene, $\beta$ -myrcene and decanal Potential	The potential source of vitamin C; oil is used in various preparation to reduce skin itching and skin nourishment, pulp left after extraction of juice is useful as a facial ingredients.
22.	<i>Cocos nucifera</i> Arecaceae	Nariyal	Sugars, vitamins, minerals, amino acids and phytohormones	For skin itching and rashes, Coconut oil is used.
23.	<i>Cucumis sativus</i> Cucurbitaceae	Khira	24-ethylcholesta-7, 25-trienol, 25-dienol, avenasterol, spinasterol, karounidiol and isokarounidiol	The water extract of fruits and seeds protect skin from sunburn
24.	<i>Curcuma longa</i> Zingiberaceae	Haldi	Curcumin, turmerone and zingiberene; cineole and p-tolylmethyl carbinol $\alpha$ -phellantrene, terpinolene, 1,8-cincoole, undecanol and p- cymene	The Rhizome powder possesses anti-inflammatory and anti-oxidant properties; used in facial, face creams and ointments
25.	<i>Cuscuta reflexa</i>	Akash bel	6,7-dimethoxy-2H-1-benzopyran-2-one, 3-(3,4-	To control dermatitis,

	<i>Convolvulaceae</i>		dihydroxyphenyl)-2-propen-1-ethanoate, 2-(3-hydroxy-4-methoxyphenyl)-3	itching and ringworm, plant extract is used.
26.	<i>Cydonia oblonga</i> <i>Rosaceae</i>	Bile	3-O-caffeoylquinic, vicenin-2, stellarin-2, schaftoside, chrysoeriol, citric, ascorbic, malic, quinic, shikimic and fumaric acids	For beautification and protection of skin, seed extract is used.
27.	<i>Capsicum annum</i> <i>Solanaceae</i>	Mirch	Phenols, flavonoids, carotenoids, capsaicin, dihydrocapsaici, poliphenols, flavonoids, carotenoids, capsaicinoids	Fruits boiled in "sarson" oil and oil is poured in ear; good for toothache.
28.	<i>Cinnamomum tamala</i> <i>Lauraceae</i>	Tej-patta	Trans-sabinene hydrate, (Z)- $\beta$ -ocimene, myrcene, $\alpha$ -pinene, $\beta$ -sabinene, sesquiterpenes, germacrene A, $\alpha$ -	The leaves used for scouring teeth; good for gum inflammation.
29.	<i>Citrus limon</i> <i>Rutaceae</i>	Galgal	A-pinene, camphene, b-pinene, sabinene, myrcene, a-terpinene, linalool, b-bisabolene, limonene, trans-a-bergamotene, nerol, neral	The leaves used for scouring teeth and good as a mouth freshener.
30.	<i>Citrus medica</i> <i>Rutaceae</i>	Nimbu	Limettin, stigmasta-5, 22-dien-3-ol, palmilic acid	The leaves and rind of fruits recommended for scouring teeth along with a pinch of rock salt.
31.	<i>Curcuma angustifolia</i> <i>Zingiberaceae</i>	Haldi	Neocurdione, 1,2-hexadecanediol, curcusesterterpene A, curcusesterterpene B, curcusesterterpene C, n-nonacosan-1-ol, curcumin	The powdered rhizome mixed with and mustared oil is applied on gums for pyorrhoea.
32.	<i>Eclipta alba</i> <i>Asteraceae</i>	Bhringraj	Stigmasterol, Hentriacontanol, P-amyryn, Luteolin-7-O-glucoside, Wedelolactone, Triterpene, Eclalbatin, Ursolic acid, Oleanolic acid	To control skin diseases and eczema, paste of herb is used.
33.	<i>Euphorbia thymifolia</i> <i>Euphorbiaceae</i>	Choti dhudhi	Afzelin, quercitrin, myricitrin, rutin, quercitin, euphorbin-A, euphorbin-B, euphorbin-C, euphorbin-D	To control ringworm and skin infections, plant extract is used.
34.	<i>Jasminum grandiflorum</i> <i>Oleaceae</i>	Chameli	Secoiridoid glucosides, 2"-epifraxamoside, demethyl-2"-epifraxamoside, secoiridoid, jasminkanhydride	The essential oil extracted from flowers of Chameli is used in skin creams and lotions to control skin diseases and protection from sunburn.
35.	<i>Juniperus communis</i> <i>Cupressaceae</i>	Aaraar	Monoterpene hydrocarbons, sabinene, $\alpha$ -pinene and limonene	The whole plant extract is useful in skin creams to control skin rejuvenation.
36.	<i>Lavandula vera</i> <i>Lamiaceae</i>	Lavender	Resinous matter, tannic acid	The essential oil is used in skin anti-acne
37.	<i>Leucas aspera</i> <i>Lamiaceae</i>	Hul Khusa	Triterpenoids, oleanolic acid, ursolic acid, b-sitosterol, nicotine, sterols, glucoside, diterpenes	To control scabies, skin psoriasis, chronic skin, skin eruption and eczema, the juice of leaves is applied
38.	<i>Mallotus philippensis</i> <i>Euphorbiaceae</i>	Kamala	5, 7-dihydroxy-8-methyl-6-prenylflavanone, 3'-prenylrubranine, red compound, isorottlerin, rottlerin	To control scabies ringworm, leprous eruption, etc flower powder is used.
39.	<i>Mangifera indica</i> <i>Anacardiaceae</i>	Aam	Mangiferin, isomangiferin, tannins, gallic acid, protocatechic acid, catechin, mangiferin, alanine, glycine, $\gamma$ -aminobutyric acid, kinic acid, shikimic acid	The plant extract possesses anti-oxidant properties.
40.	<i>Matricaria chamomilla</i> <i>Asteraceae</i>	Babuna	Herniarin, umbelliferone, chlorogenic acid, caffeic acid, apigenin, luteolin, luteolin-7-O-glucoside, quercetin, rutin, naringenin	The leaves extract is applied in anti-acne cream.
41.	<i>Mimosa pudica</i> <i>Mimosaceae</i>	Lajwanti	Flavones, isorientin, orientin, isovitexin, vitexin	To control itching, herb extract is applied in skin creams and lotions.
42.	<i>Momordica charantia</i> <i>Cucurbitaceae</i>	Karela	Momordicin I, momordicin II, cucurbitacin B, momordin, charantin, charantosides, momordicinin, momordicilin, momordenol, momordol momorcharin, momordin	The plant extract of Karela possesses antioxidant properties
43.	<i>Ocimum sanctum</i> <i>Lamiaceae</i>	Tulsi	Eugenol, <i>epi</i> - $\alpha$ -cadinol, $\alpha$ -bergamotene, $\gamma$ -cadinene	To control skin infection and rejuvenation, leaves extract is used.
44.	<i>Phyllanthus emblica</i> <i>Euphorbiaceae</i>	Amla	Ellagitannins, emblicanin A, emblicanin B, punigluconin, pedunculagin, punicafolin, phyllanemblinin A, phyllanemblin, ellagic acid, gallic acid	The fruit extract of Amla possesses anti-oxidant properties.
45.	<i>Pistia stratiotes</i>	Water	Stigmasterol, stigmasteryl stearate, palmitic	To control chronic skin

	<i>Araceae</i>	lettuce	acids, anthocyanin-cynidin-3-glucoside, luteolin-7-glycosid, vitexin, orientin	disorders, leaves extract is applied.
46.	<i>Prunus amygdalus Rosaceae</i>	Badam	3-O-methylquercetin 3-O-β-d-glucopyranoside, naringenin 7-O-β-d-glucopyranoside, catechin, protocatechuic acid, vanillic acid, p-hydroxybenzoic acid	The Kernel extract is used in sun creams and other formulations to make the skin fair and beautification creams.
47.	<i>Psoralea corylifolia Fabaceae</i>	Babchi	Corylinin, isopsoralen, psoralen, sophoracoumestan A, neobavaisoflavone, daidzin, uracil	To control skin diseases, seeds extract is used.
48.	<i>Rosa damascena Rosaceae</i>	Lal gulab	Citronellol, Citronellyl acetate, Citronellyl formate, eugenol, Farnesol, Geraniol, Nerol, Geranyl acetate, Geranyl formate, Linalool, Methyl isoeugenol, Rose oxide, Alpha-Terpeneol, 4-Terpinenol, Methyl heptenone, Humulene, Hexanol, Guaiene, Eudesmol, Guaiene, Humulene	The essential oil extracted from flowers is used in skin creams, lotions and ointment for beautification, smoothness and protection from sunburns.
49.	<i>Santalum album Santalaceae</i>	Chandan	Alpha- and beta-santalol, cedrol, esters, aldehydes, phytosterols, squalene	The paste of hardwood is used in face pack; essential oil used in preparation of creams, ointments and lotions for skin beautification and protection from sunburn; possesses anti-oxidant properties.
50.	<i>Saussurea lappa Asteraceae</i>	Kuth	P-hydroxybenzaldehyde, ethyl 2-pyrrolidinone-5(s)-carboxylate, 5-hydroxymethyl-furaldehyde, palmitic acid, succinic acid, daucosterol, beta-sitosterol	Ointments for chronic skin diseases, roots extract is used.
51.	<i>Sesamum indicum Pedaliaceae</i>	Til	P-hydroxybenzaldehyde, ethyl 2-pyrrolidinone-5(s)-carboxylate, 5-hydroxymethyl-furaldehyde, palmitic acid, succinic acid, daucosterol, beta-sitosterol	Ointments for chronic skin diseases, roots extract is used.
52.	<i>Swertia chirayita Gentianaceae</i>	Cheretta	Triterpene swertanone, seco-hopene lactones, swertiamarin swertia lactone – C, swertain – D	The bark powder extract of Cheretta controls skin affections; possesses antioxidant properties.
53.	<i>Withania somnifera Solanaceae</i>	Aswagandh	Withanolides, (-)-sominolide, mindabeolide-1, withanolide-R, flabelline, corydaline, Oxyhydrastine, fumaritine, protopine, fumariline, juziphine, tetrahydropalmatine, N-feruloyl tyramine, (+)-bicuclline, (-) corlumine	The whole plant extract is used in skin cleansing formulations and possesses antioxidant properties.
54.	<i>Zea mays Makka</i>	Makka	Luxuriantes, Zea perennis, Zea diploperennis, Zea luxurians	The stigma extract is used in creams and lotions for skin rejuvenation.
55.	<i>Calendula officinalis Asteraceae</i>	Marigold	α-cadinol, T-muurool, a-thujene, d-cadinene, a-thujene, d-cadinene, d-cadinene	The flowers extract is used in hair creams for smoothening effect.
56.	<i>Carthamus tinctorius Asteraceae</i>	Safflower	Benzyl-O-β-D-glucopyranoside, syringarenol, liriorensin-A, β-sitosterol, stigmasterol	The Alcoholic extract is used in hair tonics.
57.	<i>Centella asiatica Apiaceae</i>	Mandukaparni	Centellin, asiaticin, centellicin, asiatic acid, asiaticoside, madecassic acid, madecassoside, brahmoside, brahmie acid, brahminoside, thankuniside, isothankuniside, centelloside, madasiatic acid, centic acid, cenellic acid, betulinic acid, indocentic acid	For the growth and maintenance of hairs, the whole plant extract is used.
58.	<i>Cocos nucifera Arecaceae</i>	Nariyal	Minerals, vitamins, dietary fibres, sugars, organic acids, fatty acid and amino acid, α-Tocopherol, citric, malic acids	Kernel oil is well-established hair oil, used as such or as a basic raw material for preparing hair oils and tonics.
59.	<i>Eclipta alba Asteraceae</i>	Bhangra	Ecliptasaponin C, daucosterol, stigmasterol-3-O-glucoside, wedololactone, ecliptal, β-amyryn, luteolin-7-O-glucoside, hentriacontanol, heptacosanol, stigmasterol	For hair nourishment and dyeing whole plant extract is used.
60.	<i>Ficus racemosa Moraceae</i>	Bargad	B-sitosterol, p-amyryn, lupiol acetate	The Aerial root powder is mixed with coconut oil for massage to check falling hairs.
61.	<i>Juglans regia Juglandaceae</i>	Akroot	Oleic acid, macadamia, linoleic acid, linolenic acid, methionine, cysteine, tryptophan, threonine	For hair dyeing leaves and hull of fruits is used.
62.	<i>Lawsonia inermis Lythraceae</i>	Henna	Lalioside, lawsoniaside, uteolin-7-O-β-d-glucopyranoside, awsonicin, lawsonadeem,	The leaves paste is used for hair dyeing and nourishment.

			vomifoliol	
63.	<i>Nardostachys jatamansi</i> Valerianaceae	Jatamansi	$\beta$ -eudesmol, elemol, $\beta$ -sitosterol, angelicin, jatamansinol, nardostachysin	The extract of rhizome is used in hair tonics for their growth.
64.	<i>Phyllanthus emblica</i> Euphorbiaceae	Amla	Gallic acid, ellagic acid, 1-O-galloyl-beta-D-glucose, 3,6-di-O-galloyl-D-glucose, chebulinic acid, quercetin, chebulagic acid, corilagin, 3-ethylgallic acid (3-ethoxy-4,5-	For promotion of hair growth, fruit extract is used in oils.
65.	<i>Salvia officinalis</i> Lamiaceae	Sage	Alpha-thujone, camphor and viridiflorol. Carnosol, rosmanol, epirosmanol, isorosmanol, galdosol, and carnosic acid	The Aqueous extract is used as hair conditioner.
66.	<i>Sapindus mukorossi</i> Sapindaceae	Ritha	Saponins, sugars and mucilages	The extract of fruit coat works as natural shampoo and is used in herbal shampoo as hair cleanser.
67.	<i>Saussurea lappa</i> C.B. Asteraceae	Kuth	P-hydroxybenzaldehyde, ethyl 2-pyrrolidinone-5(s)-carboxylate, 5-hydroxymethyl-furaldehyde, palmitic acid, succinic acid, glucose, daucosterol, beta-sitosterol	The roots extract is used in hair dyeing.
68.	<i>Sesamum indicum</i> Pedaliaceae	Til	Latifonin, momor-cerebroside, soya-cerebroside II, benzyl alcohol-O-(2'-O-beta-D-xylopyranosyl, 3'-O-beta-D-glucopyranoside)-beta-D-glucopyranoside, beta-sitosterol, daucosterol, D-galactitol	The seed oil is one of the major sources of hair oils, which is used as such or a base for preparing specific hair oils.
69.	<i>Terminalia bellirica</i> Combretaceae	Behera	Tryptophan, threonine, phenylalanine, tyrosine, termilignan, thannilignan, together with 7-hydroxy-3,4,4,-(methylenedioxy) flavan, anolignan B	The seed extract and oil is good for hair dyeing preparation.
70.	<i>Terminalia chebula</i> Combretaceae	Harra	Arjunolic acid; terminolic acid; chebuloside I, II; triterpenoids; triterpenoid glycosides	In hair care formulations, seed extract is used.
71.	<i>Thymus serpyllum</i> Lamiaceae	Banajwain	Thymol and carvacrol, linalool, p-cymene, $\gamma$ -terpinene, borneol, terpinen-4-ol and 1, 8-cineole	For preparing hair tonics, whole herb extract is used.
72.	<i>Ficus hispida</i> Moraceae	Daagrein	Norisoprenoid, ficustriol phenanthroindolizidine alkaloid, O-methyltylophorinidine	The Latex is used for toothache.
73.	<i>Ipomoea carnea</i> Convolvulaceae	Ghodan	Swainsonine, 2- <i>epi</i> -lentiginosine, calystegines B1, B2, B3, and C1, N-methyl- <i>trans</i> -4-hydroxy-l-proline	The leaf juice recommended for toothache.
74.	<i>Jatropha curcas</i> Euphorbiaceae	Japhrota	Fatty acids, palmitic acid, stearic acid, unsaturated fatty acids, oleic acid, linoleic acid	The Twigs used as a toothbrush; good against dental caries.
75.	<i>Juglans regia</i> Juglandaceae	Khod	Palmitate, stearate, oleate, linoleate, linolenate	The Bark and leaves used for scouring teeth.
76.	<i>Mangifera indica</i> Anacardiaceae	Aam	Mangiferin, isomangiferin, tannins, gallic acid protocatechic acid, catechin, mangiferin, alanine, glycine, $\gamma$ -aminobutyric acid, kinic acid, shikimic acid	The leaves used for scouring teeth.
77.	<i>Murraya koenigii</i> Rutaceae	Gandhela	$\alpha$ -pinene, sabinene, $\beta$ -pinene, $\beta$ -caryophyllene, limonene, bornyl acetate, terpinen-4-ol, $\gamma$ -terpinene, $\alpha$ -humulene	The stem used for scouring teeth and for healthy gums.
78.	<i>Murraya paniculata</i> Rutaceae	Gandhela	$\beta$ -cyclocitral, methyl salicylate, <i>trans</i> -nerolidol, $\alpha$ -cubebene, (-)-cubenol, $\beta$ -cubebene, isogermacrene, $\beta$ -caryophyllene, (-)-zingiberene, germacrene D, $\alpha$ -copaene, $\alpha$ -humulene	It is used for scouring teeth and for healthy gums.
79.	<i>Pistacia integerrima</i> Anacardiaceae	Kakarsingi	Chrysoeriol, diandraflavone, quercetin-3-O- $\beta$ -d-glucopyranoside, kaempferol-3-O- $\beta$ -d-glucopyranoside, quercetin-3-O-(6"-O-syringyl)- $\beta$ -d-glucopyranoside, kaempferol-3-O-(4"-O-galloyl)- $\alpha$ -l-arabinopyranoside, rutin, aglycons, quercetin, kaempferol, apigenin	The leaves chewed to check toothache.
80.	<i>Plumbago zeylanica</i> Plumbaginaceae	Chitra	Plumbazeylanone, plumbagic acid, $\beta$ -sitosterol, lupeol, lup-20(29)-en-3,21-dione, norcanelilline, 3-O-glucopyranosyl plumbagicacid, methylester, uridine, daucosterol	The stem is recommend for scouring teeth and root paste to check toothache.
81.	<i>Prunus cerasoides</i> Rosaceae	Paza	Jaquanine, prunetin, sascuranin, taxifolin, padmetin	The Twigs are used for scouring teeth.
82.	<i>Psidium guajava</i> Myrtaceae	Guava	Guajanoic acid, beta-sitosterol, uvaol, oleanolic acid, ursolic acid	The leaves and stem are used for scouring teeth.
83.	<i>Robinia pseudo-acacia</i> Fabaceae	Rasinia	Acacetin, secundiflorol I, mucronulatol, isomucronulatol, isovestitol, Robinspirols A-C, Robinlin, Robinpiramic acid, Abrisapogenol E, abrisapogenaldacetal	The powdered bark is recommended for toothache.
84.	<i>Spilanthes oleracea</i> Asteraceae	Karkara	Trans-caryophyllene, germacrene-D, 1-dodecene, spathulenol, spilanthol	The Inflorescence of Karkara is used for gum inflammation.

85.	<i>Vitex negundo</i> Verbenaceae	Bana	Luteolin, luteolin-3''-O-glucuronide, isoorientin, 2''-p-hydroxybenzoylmussaenosidic acid, agnuside, phydroxyl benzoic acid, stigmasterol, $\beta$ -sitosterol	The Twigs recommended to clean teeth; considered good for pyorrhea, gum inflammation, dental caries etc.
86.	<i>Zanthoxylum armatum</i> Rutaceae	Tirmir	Linalool, methyl cinnamate, limonene, $\beta$ -phellandrene, 1, 8-cineole, sabinene, $\beta$ -terpineol, terpinen-4-ol, $\alpha$ -terpineol, $\beta$ -cymene, 2-tridecanone	The Twigs considered as a best source for sucoring teeth and considered good for any dental problem.

In a study conducted by Desai (2014) on consumer buying behavior of cosmetic products in Kolhapur, it was reported that the major part of cosmetic market is covered by females and quality followed by Media and reference groups are the main factors to influence consumer buying decision. Generally, people recognize cosmetics as a synthetic product used in the process of beautifying a person. In spite of reports showing the allergies and side effects caused by using synthetic products, its market stays tall. The major reason being the unawareness of people about the health benefits of using the natural cosmetic products. The natural herbs and their products when used for their aromatic value in cosmetic preparation, known as herbal cosmetics cannot only be explained with the ingredients but also the production method having a great importance. The cosmetic products used for maintaining one's beauty, be it natural or synthetic, has an impact on a person's health too so it is vital to probe about the constituent ingredients and the method of cosmetic production before buying and using any cosmetics. In a study conducted by Hemanth, Franklin and Senith (2014), it was reported that quality and price are the major key factors which can persuade cosmetic consumer buying behavior. In another study conducted by Banu and Gokila (2015) on consumer awareness, attitude and preference towards herbal cosmetic products with special reference to Coimbatore city, it was reported that family income per month and amount spending for herbal products are positively correlated. The study further, revealed that Quality of product was ranked as most important factor that influences consumers to purchase cosmetics. The study concluded with a note that consumers

believe that herbal cosmetics are not a luxury now and should be used by consumers for health benefits. The study conducted by Dr. Nagananthi and Mahalakshmi (2016) on consumers' brand preference and buying behavior of cosmetic products at Coimbatore city India reported that personal care is one of the most significant reasons for purchasing cosmetics. The study conducted by Rameshwari, Mathivanan and Jeganathan (2016) revealed that though cosmetic market is dominated by female consumers, male consumers also participate in the same. In another study conducted by Dr. Anandrajan and Sivagami (2016), it was reported that reduction in price and attractive promotional schemes can attract more customers towards purchasing cosmetics. In the light of above literature, we conduct a survey to assess female college going students awareness and attitude towards using herbal and non-herbal based cosmetic products. Based on the results of the study further awareness can be created among the general population about the usage and effects of herbal cosmetics. The objectives of our study are as under:

- (i) To analyze on what basis the female college going students tend to buy the cosmetic products.
- (ii) To understand the requirement and expectation of female college going students regarding cosmetics.
- (iii) To know about the female college going students spending on cosmetics.

#### **Significance of the study:**

The present study will help the readers to recognize the consumer behavior while purchasing the cosmetic products. The results of our study will be highly useful to the broad spectrum of stakeholders associated with Cosmetics. The prime

beneficiaries of our findings, no doubt, will be the manufacturers of different varieties of Cosmetics.

**Scope of the study:**

The conclusions drawn from our study are based on the responses given by the consumers in a specific area. This study will be helpful in getting an insight into the perception of Consumers on Advertisements and its impacts on changing the buying behaviors of consumers.

**Limitations of the study:**

The limitation in this research was small sample size.

**2. MATERIALS AND METHODS**

The present empirical study conducted in Jammu and Kashmir was based on a survey design intended to investigate the awareness and attitude of college students towards use of cosmetics in Jammu and Kashmir. A well-designed validated questionnaire was used to collect the information from a sample of 400 college going students (200 from Science and 200 from Arts stream) from different Colleges of Central Kashmir, Kashmir using stratified random sampling technique. The respondents understudy were explained the purpose of the study to get their consent. The data collected was analyzed using the appropriate statistical tools with the help of statistical software SPSS (version 21).

**Sample size Determination**

The sample size for present study was calculated using the formula (Cochran, 1977)

$$n = \frac{Z_{\alpha}^2 P(1 - P)}{d^2}$$

We take p=0.5 ,  $Z_{\alpha} = 1.96$  and d=0.05. That gives the approximate sample size n ~ 384. We choose sample size for our study as n = 400 female students, selecting 200 from Arts stream and 200 from Science stream.

**Research Hypothesis**

Hypothesis: There will be no significant difference in awareness and attitude between arts and science stream college students towards use of cosmetics. To test the hypothesis, we use chisquare test (with usual notations) given by

where  $X^2 \sim \chi_1^2$ ,  $o_i$  and  $e_i$  represent observed and expected frequencies. We

$$X^2 = \sum_{i=1}^2 \frac{(o_i - e_i)^2}{e_i}$$

reject  $H_0$  if p-value is less than specified level of significance 0.05 or 0.01.

**RESULTS AND DISCUSSION**

The data shown in Table 1 revealed that the distribution of study population as per the characteristics Education status, Type of Family, Economic status, Residence, Family size and Occupation of parents. It is observed that majority of the respondents were from nuclear families, from middle class families, from urban areas, having family size upto 6 and maximum belonging to business class families. Statistically, non-significant difference was observed between the students of Science and Art stream in all characteristics under study ( $p > 0.05$ ).

**Table 1: Characteristics of the studied population**

Characteristics		Science Students		Art Students		Chisquare	p-value
		No.	%	No.	%		
Type of Family	Joint	47	23.5	42	21.0	0.361	>0.05
	Nuclear	153	76.5	158	79.0		
Economic Status	Low	23	11.5	19	9.5	0.426	>0.05
	Middle	177	88.5	181	90.5		
Residence	Urban	119	59.5	112	56.0	0.502	>0.05
	Rural	81	40.5	88	44.0		
Family size	Upto 4	13	6.5	17	8.5	1.452	>0.05
	Upto 6	171	85.5	162	81.0		
	>6	16	8.0	21	10.5		
Occupation of parents	Business	131	65.5	124	62.0	2.308	>0.05
	Govt Employee	43	21.5	39	19.5		
	Any other work	26	13.0	37	18.5		

Source: Field survey, 2018-19



The data presented in Table 2 reveals that Science students told that they purchase cosmetics to enhance Personality (Science stream=45.5%, Arts stream=36.5%), to attract opposite gender (Science stream=18.0%, Arts stream=20.5%), to look Younger (Science stream=13.0%, Arts stream=18.5%), occupational Requirement (Science stream=8.5%, Arts stream=9.5%), Health and Hygiene (Science stream=8.5%, Arts stream=5.5%) and status (Science stream=6.5%, Arts stream=9.5%). Statistically, nonsignificant difference in the opinion of Science and Arts stream students was observed ( $P>0.05$ ).

**Table 2: Reason to purchase cosmetic product**

Reason	Science Students (n=200)		Art Students (n=200)		Chisquare	p-value
	Frequency	%	Frequency	%		
Health and Hygiene	17	8.5	11	5.5	6.743	>0.05
Status	13	6.5	19	9.5		
To look Younger	26	13.0	37	18.5		
To attract opposite gender	36	18.0	41	20.5		
To enhance Personality	91	45.5	73	36.5		
Occupational Requirement	17	8.5	19	9.5		

Source: Field survey, 2018-19

The data presented in Table 3 reveals that Science students told that the motivating factors for using cosmetics are Advertisement (21.5%), Brand Name (13.5%), Price (15.5%), Quality (5.5%), Fragrance (8.5%), Recommendation From Beautician or Salesperson (6.0%), Outer Appearance (6.0%), Quantity (11.5%), Discount (5.0%) and Easy Availability (7.0%). Further, Arts stream students told that the motivating factors for using cosmetics are Advertisement (19.5%), Brand Name (14.5%), Price (14.0%), Fragrance (10.5%), Quality (9.0%), and Easy Availability (6.5%), Recommendation From Beautician or Salesperson (7.0%), Outer Appearance (7.5%), Quantity (7.0%) and Discount (4.5%). Statistically, nonsignificant difference was observed in the opinion of Science and Arts stream students ( $P>0.05$ ). The results of our study are in agreement with the earlier study conducted by Desai (2014) who reported that quality of cosmetics, advertisement and the reference groups were the important factors influencing the consumer buying behavior.

**Table 3: Motivating Factors for using cosmetics**

Reason	Science Students (n=200)		Art Students (n=200)		Chisquare	p-value
	Frequency	%	Frequency	%		
Brand Name	27	13.5	29	14.5	2.387	>0.05
Advertisement	43	21.5	39	19.5		
Price	31	15.5	28	14.0		
Quality	23	11.5	18	9.0		
Fragrance	17	8.5	21	10.5		
Quantity	11	5.5	14	7.0		
Outer Appearance	12	6.0	15	7.5		
Easy Availability	14	7.0	13	6.5		
Discount	10	5.0	9	4.5		
Recommendation From Beautician or Salesperson	12	6.0	14	7.0		

Source: Field survey, 2018-19

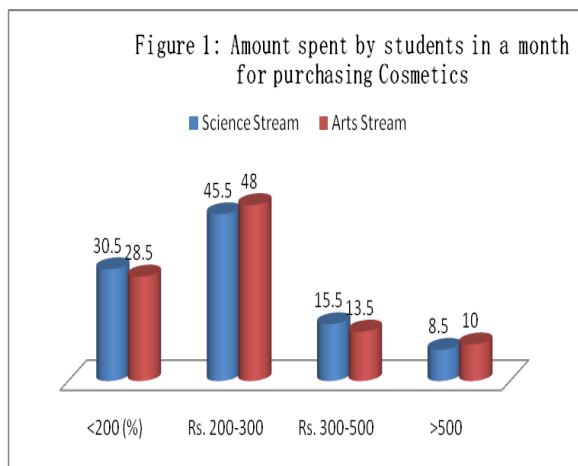
The data presented in Table 4, reveals that level of cosmetic usage among students living in urban areas was more than students from rural areas. Statistically, there is significant difference in the level of cosmetic usage between students living in Urban and Rural Areas ( $P<.05$ ).

**Table 4: Level of Cosmetic use among female college students of J&K**

Area of Residence	Level of Cosmetics usage among college students			Chisquare	P-value
	High (%)	Moderate (%)	Low (%)		
Urban	137 (68.5)	39 (19.5)	24 (12.0)	31.049	<0.05
Rural	84 (42.0)	86 (43.0%)	30 (15.0)		

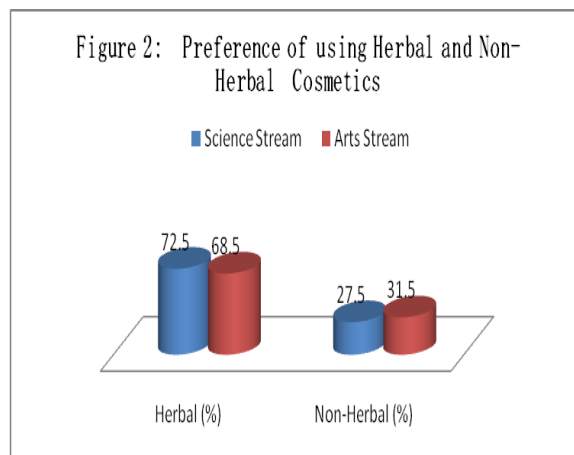
Source: Field survey, 2018-19

The data presented in Figure 1, shows that majority of the respondents understudy spend Rs 200-300 for cosmetics on average (Arts students= 48.0% and Science students=45.5%), followed by monthly expenditure on cosmetics < Rs 200 (Arts students= 28.5% and Science students=30.5%), followed by expenditure on cosmetics Rs 300-500 per month (Arts students= 13.5% and Science students=15.5%) and very less percentage of students spend more than Rs 500 per month on cosmetics (Arts students= 10.0% and Science students=8.5%). The study shows that statistically, nonsignificant difference in the monthly expenditure on cosmetics between Arts stream students and Science stream students was observed ( $P>.05$ ).



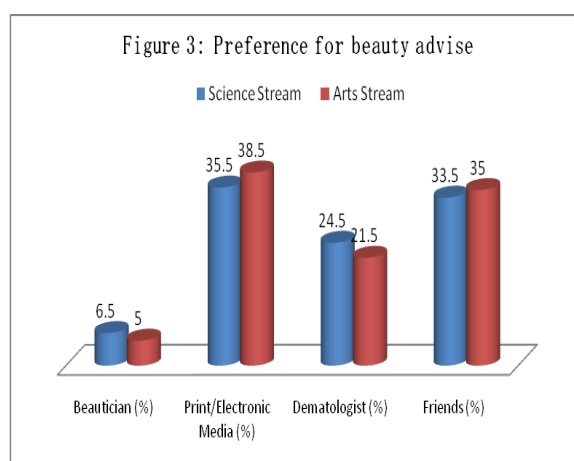
Source: Field survey, 2018-19

The data presented in Figure 2, shows that majority of the respondents prefer using herbal cosmetics (Arts students= 68.5% and Science students= 72.5%). They believe herbal cosmetics are not harmful and have no side effect. Herbal products usage claim to renew cells, minimize pores and restore hydration. The study shows that statistically, there was nonsignificant difference in the preference of using herbal and non-herbal cosmetics between Arts stream students and Science stream students ( $P>.05$ ). Our results are in agreement with the earlier study conducted by Rekha and Gokila (2015) who found that consumers prefer to use herbal cosmetics more than synthetic.



Source: Field survey, 2018-19

The data presented in Figure 3, shows that majority of the respondents consult Print/Electric Media for beauty advise (Arts students= 38.5% and Science students= 35.5%), followed by friends (Arts students= 35.0% and Science students= 33.5%), followed by dermatologist (Arts students= 21.5% and Science students= 24.5%) and a small percentage of students follow beautician for beauty advise (Arts stream=5.0% and Science stream=6.5%). The study shows that statistically, nonsignificant difference in the opinion Arts and Science stream students regarding preference for beauty advise was observed ( $P>.05$ ).



Source: Field survey, 2018-19

The picture given below, reveals that cosmetic market in Jammu and Kashmir is dominated by females. Our study is consistent with the earlier study conducted

by Rameshwari, Mathivanan and Jeganathan (2016) who reported same trend in Tamilnadu, India. The study (Prashant., et al, 2005) revealed that the skin and hair beauty of individuals depends on the health,

habits, routine job, climatic conditions and maintenance. In our study the respondents under study were college female students who love to protect their body especially skin and hair.



Source: Field survey, 2018-19

#### 4. CONCLUSIONS

The production and usage of herbal products has grown in recent years since customers have become concerned with health, quality and beauty appearance. Consumers in majority prefer natural cosmetics products due to increased environmental concerns. In this study, it was observed that majority of the respondents prefer to use herbal cosmetic products as compared to non-herbal. The main factor as per our study which influences the purchasing intentions of the respondents towards natural cosmetic products was health concern. Majority of respondents under study who showed tendency of purchasing new brands of natural cosmetics have higher probability for purchasing herbal cosmetics compared to the respondents who don't care about brand. The main reason of using cosmetics as per students under study was to enhance Personality and the motivating factors were advertisement, price and quality. Majority of the students reported that they spend Rs 200-300 monthly on purchasing cosmetics generally from their pocket money and students believe that use of herbal cosmetics is beneficial for health as well as to increase self-confidence. It can be concluded from our study that female students under study

have concerns about their consumption and tend to prefer natural cosmetic products.

The study also revealed that there was no significant difference in awareness and attitude of arts and science stream students towards use of cosmetics. The consumers under study also reported that they have a lack of trust in herbal cosmetics products as the cosmetics market in Kashmir is still an under-researched area. Companies should give clearer information about what is natural and what type of health benefits customers would gain by using natural personal care and beauty products. The results of our study also showed that respondents who have purchase intention towards natural cosmetics have positive attitudes towards recommendation of natural cosmetic products. It is observed that consumers' interest in health and environmental issues is increasing, providing a huge opportunity for the natural and organic personal care industry to form a policy that could encourage many consumers to purchase organic or natural personal care products.

#### Suggestions and Recommendations

The important suggestions and recommendations are:

(i) Customer should check and confirm the manufacturing and expiry dates,

composition of cosmetic product and other details of the cosmetic product before buying so that she/he may not worry about the after effects of the cosmetic product.

(ii) The manufacturers should take proper steps to disseminate the exact facts about cosmetics to all consumers through television and other effective media, as media have influenced the respondents generally in buying cosmetics.

(iii) The government should act more strongly to lay down standards for producing mass consumption cosmetic products and strengthen the enforcement machinery, responsible for checking various malpractices like adulteration of cosmetics, short weight, charging arbitrary prices and so on.

(iv) Every woman is more anxious about their looks and appearance as they have to compete with the rising demands of society. Today not only young women but elderly women also used many cosmetic products for their looks.

(v) Media should promote herbal cosmetics by highlighting its health benefits and less side effects.

#### ACKNOWLEDGEMENT

The authors are thankful to the female college students for providing their feedback and taking keen interest in this study. The authors would like to thank also Ms Rumysa Rafiq for helping in field world.

**Conflict of Interest:** The present study has no conflict of interest to declare by any author.

#### REFERENCES

1. Banu Rekha, M., Gokila, K., (2015): A study on Consumer Awareness, Attitude and Preference towards Herbal Cosmetics Products with special Reference to Coimbatore City. Vol 02 No-04, Page No. 96-100, International Journal of Interdisciplinary and multidisciplinary Studies.
2. Cochran WG (1977): Sampling Techniques, 3<sup>rd</sup> edition. New York: John Wiley & Sons.
3. Desai, K., (2014): A study on Consumer Buying Behavior of Cosmetic Products in Kolhapur. Vol 01 Issue 10, ISSN-2347-2723.

4. Dr.Anandrajan, S., Sivagami, T., (2016): Consumer Purchase Decision Behavior towards Cosmetics Marketing. Vol. I. Asia Pacific Journal of Research.
5. Dr.Nagananthi, T., Mahalaxmi, M., (2016) Consumers' Preference and Buying Behavior of Cosmetic Products at Coimbatore City. Vol 04 Issue 01. Inter-continental Journal of Marketing Research Review.
6. H.Hemanth Kumar, A., Franklin John, S., Senith, S., (2014): A study on Factors Influencing Consumer Buying Behaviour in Cosmetic Products. Vol 04 Issue 09. International journal of Scientific and Research Publication
7. Matic, M., Puh, B., (2015): Consumers' Purchase Intentions towards Natural Cosmetics. UDK: 658.89:159.94 Preliminary Communication
8. Pandey Shivanand, Meshya Nilam, D.Viral (2010): Herbs Play an Important Role in the Field of Cosmetics, International Journal of PharmTech Research, .2(1); 632-639
9. Prashant L Kole, Hemant R Jadhav, Prasad Thakurdesai and Anantha Naik Nagappa, cosmetics potential of herbal extracts, Indian Journal of Natural Products and Resources (IJNPR) [Formerly Natural Product Radiance (NPR)], 4(4); 315-321, 2005.
10. Rameshwari, P., Mathivanan, R., Jeganathan, M., (2016): A study on Consumer Buying
11. Behavior of Cosmetic Products in Thanjavur, Tamilnadu, India.Vol 02 Issue 03, Page No. 598-602. Indo-Asian Journal of Multidisciplinary Research.
12. S. Bagiyal Lakshmir and S. Saranya, (2017): A Study On Cosmetics Usage Of Girls
13. (With Special Reference To Pollachi Taluk), Int. Journal of Marketing Management, Vol. 4(3) Online.
14. V P Kapoor, Herbal cosmetics for skin and hair care, Indian Journal of Natural Products and Resources (IJNPR) [Formerly Natural Product Radiance (NPR)], 4(4):306-314:2005.



Corresponding Author

Dr. Bilal Ahmad Bhat, is working as Associate Professor (Statistics) since 17-08-2015 in Faculty of Fisheries, SKUAST-Kashmir J&K. Dr Bilal Ahmad was earlier working in Mathematics & Statistics Dept University of Kashmir and in SKUAST-Jammu as Assistant Professor (Statistics) before joining SKUAST-Kashmir. He has participated and presented a number of research papers in various national/international conferences. He has published more than 160 research papers in various National/International Journals of repute and has guided a number of research scholars for their PhD programme. His field of research is probability theory, information theory and applied statistics.

How to cite this article: Bhat BA, Ashraf SS, Shaheen F et.al. A study on awareness and attitude of female college going students towards use of herbal cosmetic products in central Kashmir, Kashmir. Galore International Journal of Applied Sciences & Humanities. 2020; 4(1): 5-17.

\*\*\*\*\*