

# Market availability and use of sun protective clothing/accessories among women consumers

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■ **ABSTRACT** : Present investigation is based on market availability and use of sun protective clothing/accessories among women consumers. The study was conducted using survey work on 180 sample subjects selected randomly comprised of working women and college going girls of Udaipur city. Questionnaire method was used to gather desired information. Findings revealed that majority of respondents were aware about sun protective clothing/accessories available in market and were using it readymade. Light colour cotton material was their choice, majority of respondents were not satisfied with the variety of colours, prints, materials and also with the type of clothing /accessories available in the market for sun protection.

■ **KEY WORDS**: Market, Availability, Sun, Protective, Clothing, Use, Women

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Ultraviolet radiation is the one form of radiant energy coming out from the sun ([http://www.indian\\_textilejournal.com](http://www.indian_textilejournal.com)). Although ultraviolet radiation is invisible to the human eye, most people are aware of effects of UV on the skin, called Suntan and Sunburn. The skin is the interfacial contact zone of human being with the atmosphere and acts as a protective barrier. The harmful UV radiations are absorbed completely by the epidermis ([www.skincarencure.com](http://www.skincarencure.com)). Adequate amount of UV radiation is present in India for at least 10 months a year. UV Index for India is given by Global Ozone Measurement Experiment, which was taken throughout the year. UV index ranges from moderate to extreme throughout all parts of India. Maximum during the months from March to September, the reason may be the intensity of the sun

become higher due to the position of earth and sun during that time period.

The intensity of solar UV radiation at the Earth's surface is influenced by several environmental factors, including the sun's height, latitude, altitude, ground reflection, concentration of atmospheric ozone, and presence of clouds, dust, haze, and several organic compounds. Stratospheric ozone effectively shields us from the most harmful UV radiation (UVB). As this protective filter is gradually reduced human beings and the environment are exposed to higher UV radiation levels (WHO, 2003). Moreover, people's tendency to wear lower coverage clothing, using old worn-out light weight clothing make them more susceptible to UV radiation. Each fabric has its ability to provide protection from solar radiation due to their inherent fibre structure,

density of weave and dye components. Clothing has the ability to protect the skin from solar radiation because the fabric from which it is made can reflect, absorb and scatter solar wavelengths. The ultraviolet protective factor of fabric is strongly dependent on the physical and chemical structure of the fibres.

Excessive UV radiation weakens the body's immune system in addition to causing cancer. The UVR is usually highest around midday but the temperature is often highest later in the afternoon. When the UV level reaches 3 or higher a combination of five sun protection measures (sun protective clothing, hat, sunglasses, sunscreen and shade) may be required for personal protection ([www.arpansa.gov.au](http://www.arpansa.gov.au)). Ultraviolet rays constitute a very low fraction in the solar spectrum but influence all living organisms and their metabolisms. These radiations can cause a range of effects from simple tanning to highly malignant skin cancers, if unprotected (Saravanan, 2007). To protect from the detrimental effects of UV radiation, sun protecting materials like creams, lotion, etc., have been in the market since long, but recently awareness of protective clothing is in the forefront. Dermatologists also keep emphasizing that the best protective technique to avoid excessive exposure to the sun is to wear textiles to cover your body (Yadav, and Karolia, 2014).

Light coloured, light weight, fine fabric clothing is observed more appropriate and cool to wear in summer but very few people know that it does not provide any protection from harmful UV rays of sunlight, so there is need to assess the material, colour preference in summer clothing of respondents to draw some useful conclusions.

Present paper is thus an attempt to assess 'market availability and use of sun protective clothing/ accessories among women consumers in Udaipur city.

## ■ RESEARCH METHODS

Based on the objectives of the study, the survey method was used to gather desired information from the selected respondents about market availability and use of sun protective clothing /accessories in Udaipur city.

### Selection of sample:

A sample of 180 consumers comprised of 90 working women and 90 college going students were randomly selected from Home Science, Science and Arts Colleges of the University Campus, Udaipur.

### Development of tool:

A Questionnaire was developed by the researcher for getting the required information about market availability, general trend of using sun protective clothing/accessories besides socio-personal profile of the respondents.

The data was collected and appropriate statistical measures were applied for its analysis.

## ■ RESEARCH FINDINGS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under following heads :

### Socio-personal traits of the respondents:

The socio-personal profile of the respondents included age, educational status, occupations of the respondents, type of the family and monthly income of the family. The details of the information related to this have been furnished in Table 1.

Data given in the table indicates that the majority

Table 1 : Socio-personal traits of the respondents (n = 180)		
Socio-personal traits	Number of respondents	Percentage
<b>Age (in years)</b>		
18-25	76	42.22
25-30	23	12.77
30-35	19	10.55
35-40	28	15.55
40-45	24	13.33
45-50	7	3.88
50-55	3	1.66
<b>Education</b>		
Secondary	15	8.33
Senior secondary	-	-
Graduate	61	33.88
Post-Graduate	98	54.44
Doctorate	6	3.33
<b>Occupation</b>		
Service	90	50
Students	90	50
<b>Type of family</b>		
Nuclear	153	85
Joint	27	15
<b>Monthly family income (Rs.)</b>		
10000-25000	24	13.33
25000-40000	49	27.22
40000-55000	79	43.88
Above 55000	28	15.55

of the respondents (42.22%) belongs to the age group of 18-25 years, Almost equal percentage of respondents falls in the age category of 25-35 and 40-45years containing 12.77 per cent and 13.33 per cent respondents, respectively. Majority of the respondents (54.44 %) were qualified up to postgraduates followed by graduates and higher secondary which have 33.88 per cent and 8.33 per cent of respondents, respectively. It was observed that 85 per cent respondents belonged to nuclear families. The monthly income of the respondents was categorized into four groups. The findings of the study revealed that 43.88 per cent of the respondents had monthly income of Rs. 40000-55000/- per month, followed by 25000-40000 rupee per month *i.e.* 27.22 per cent.

**Use of sun protective clothing/accessories among consumers :**

*Awareness about sun protection methods:*

The researcher asked about the sun protective methods/clothing used by them, it was found that majority of them were aware of various sun protection methods.

Sun protection methods women were aware about	No. of respondents	Percentage
Gloves	60	33.33
Summer coat	32	17.77
Scarf	48	26.66
Cap/Hat	24	13.33
Socks	20	11.11
Cowls	4	2.22
Sleeves	4	2.22
Face mask	16	8.88
Sunglasses	64	35.55
Sunscreen lotion	124	68.88
Umbrella	64	35.55

\*Respondents were having multiple responses.

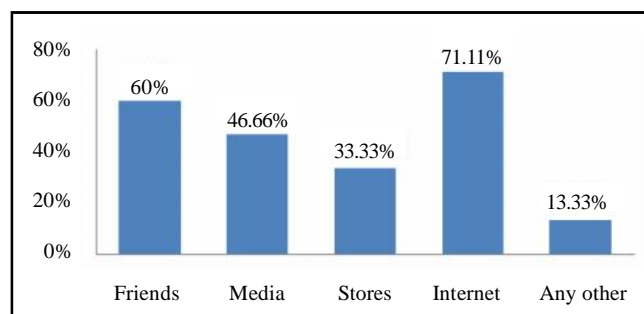
Majority of respondents (68.88%) used sunscreen lotions, while lowest number were using clothing with cowls and sleeves *i.e.* 2.22 per cent. Use of sunglasses and umbrella was reported by 68.88 per cent and 33.33 per cent respondents, respectively. Frequently used clothing items were Scarf (26.66% ), Summer coat (20%) and cap/hat (17.77%) as revealed by the respondents (Table 2).

Das (2010) also reported that medical experts

suggest several means of protection against ultraviolet radiation; use of sunscreens, avoidance of the sun at its highest intensities, wearing clothing that covers as much of the skin surface.

**Source of getting information about Sun protective clothing/accessories :**

Data in Fig. 1 represents the various sources of information about sun protective clothing/accessories. It was found that internet was the main source of information about the sun protective clothing. 60 per cent of women got the information from their friends, 46.66 per cent from the media and 33.33 per cent from the stores (market). 13.33 per cent women said they came to know about sun protective clothing from other sources.



**Fig. 1 : Sources of information about sun protective clothing / accessories**

It was observed that though clothing was used by the respondents for sun protection but the other important elements desired in the textiles like fabric type, structural parameters and constructional method were not appropriate to offer complete protection.

**Mode of travel :**

Fig. 2 depicts the common mode of travel from respondents and it was found that majority of the respondents (34 %) used personal two wheelers like scooty, active, etc. Almost equal number of respondents (21 to 23 %) used to travel by four wheelers, public transportation such as auto, city bus, etc. and walking was also very common among consumers, living in nearby areas of their workplace or educational institute

**Use of sun protective clothing/accessories:**

Data presented in Fig. 3 shows that majority of respondents (66.66%) in Udaipur city used to wear some

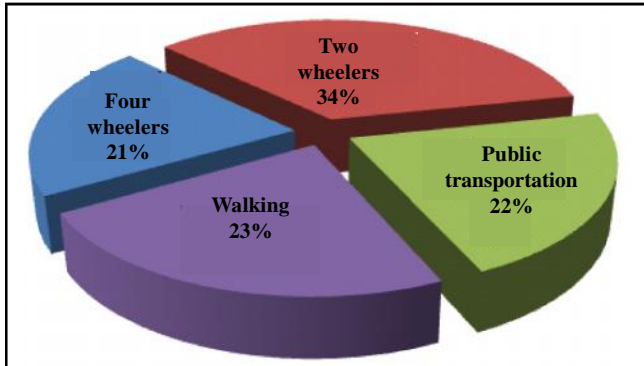


Fig. 2 : Mode of travel by per cent of respondents

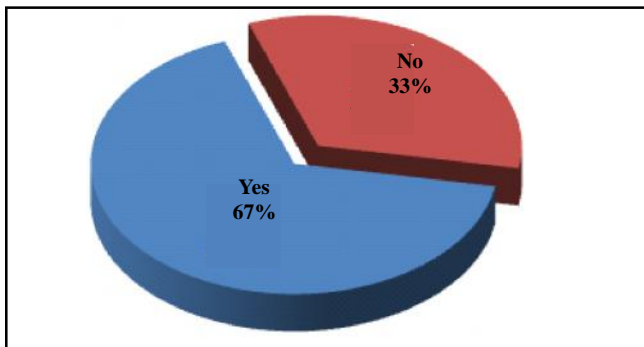


Fig. 3 : Use of sun protective clothing / accessories

clothing/accessories to get sun protection, while remaining (33.33%) respondents did not use any kind of sun protective clothing.

**Type of sun protective clothing/accessories used:**

In response to the question regarding type of clothing/accessories used, whether readymade or homemade, it was found that 94 per cent of respondents used readymade clothing/accessories for sun protection, like summer coats, caps, gloves, etc. and only 6 per cent of the women use homemade clothing, as availability of sun coats, scarves and gloves is good in the local market. (Fig. 4).

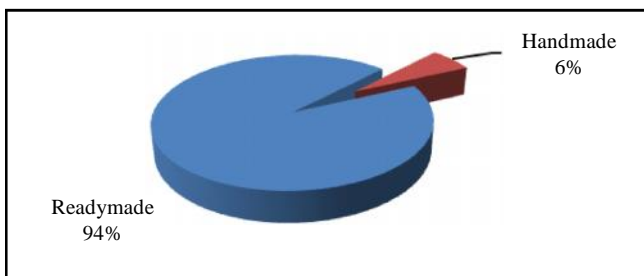


Fig. 4 : Type of clothing / accessories used

**Duration of using sun protective clothing :**

The data regarding use of sun protective clothing/accessories by the selected respondents have been presented in Table 3.

**Table 3 : Duration of using sun protective clothing (n=180)**

Duration of use of sun protective clothing (in % of daytime exposure)	No. of respondents	Percentage
10-25%	60	33.33
25-50%	56	31.10
50-75%	40	22.20
75-100%	24	13.33

Data represents the percentage of day time exposure, the respondents used to cover their body with sun protective clothing/accessories. For 75-100 per cent of time in the day very less respondents (13.33%) used to cover themselves. Majority of respondents (33.33%) used to wear sun protective clothing/accessories only for 10-25 per cent of the time as is clear from the table.

**Material preference during summer season:**

The material preference of respondents in summer wear clothing has been presented in Fig. 5. According to the survey data, 93.3 per cent of respondents preferred to wear pure cotton clothing. The second most preferred clothing material was found blended textile materials like poly-cot, poly-viscose, etc. Linen, silk, khadi were preferred by 6.66 per cent, 4.4 per cent, 4.4 per cent respondents, respectively.

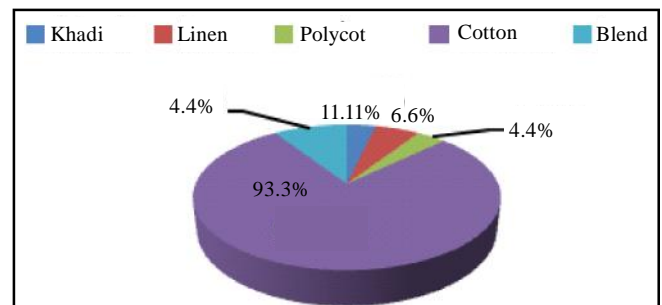


Fig. 5 : Clothing material used in summer

**Colour preference in summer's clothing:**

It is clear from the Fig.6 that majority of respondents (91.11%) preferred to wear light coloured clothing in summers while remaining respondents preferred to wear dark and bright colours. The reason of wearing dark colours was found as personal liking and

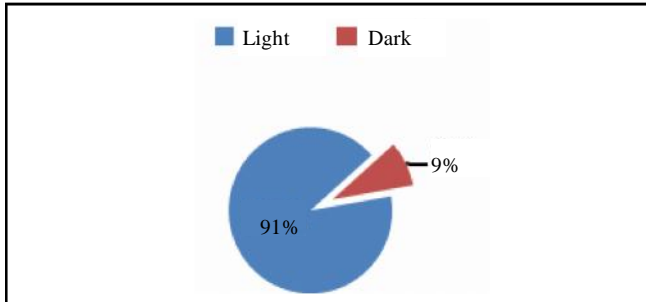


Fig. 6 : Colour preference in clothing for summer wear

passion for bright colours to look attractive.

**Clothing preference in summers:**

Data presented in Table 4 depicts the clothing preference of the respondents in summers and it was found that the highest percentage of respondents (75.5%) used to wear Long kurtas with leggings followed by 62.2 per cent of respondents who preferred T-Shirts along with Jeans/trousers. Classic evergreen Indian dresses like salwar suits and saris were also very much liked and preferred by 26.66 and 11.11per cent respondents, respectively.

Table 4 : Type of clothing used during summer season (n=180)		
Type of clothing used	No. of respondents*	Percentage
Salwar suit	48	26.66
Saree	20	11.11
T-shirt-jeans/trousers	112	62.2
Long Kurta	136	75.5

\* Respondents were having multiple responses.

**Material preference in sun protective clothing/accessories:**

Perusal of data in Fig. 7 shows the material preference in sun protective clothing/accessories by the respondents. It was found that majority of respondents (80%) preferred cotton material followed by linen (24.4%).

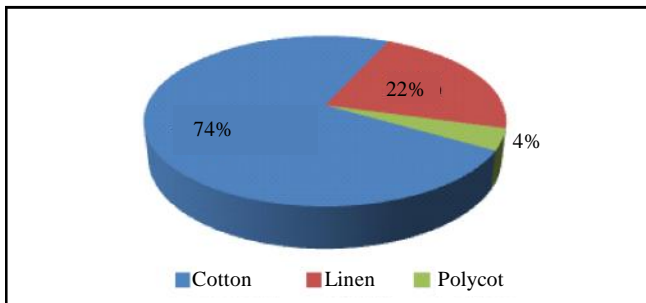


Fig. 7 : Material preference in clothing / accessories

Lautenschlager (2007) concluded in his study that most summer fabrics, including cool cotton or linen, offer little or no protection from the sun but the people are not aware of it.

**Reason for covering the Skin/body:**

The researcher was curious to know about the reason of covering the skin/ body parts, by clothing material and whether just covering the Skin/body with any fabric/cloth prevents the body from UV radiations. The data gathered revealed that most of the respondents (48.88%) reported that covering the body with clothing did not provide UV protection but it helps in preventing tanning of skin and heat. Fig. 8 depicts that 42.22 per cent of respondents were sure that covering the skin/body with a fabric prevents UV radiations. Remaining respondents were neutral in their response.

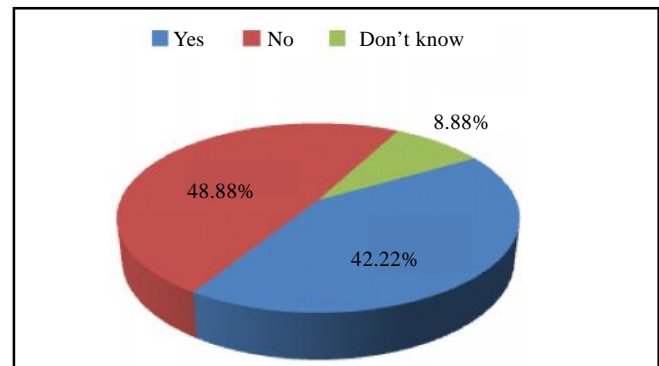


Fig. 8 : Reason for covering the skin / body parts to get UV/sun protection

**Market availability of sun protective clothing/accessories :**

*Type of sun protective clothing/accessories available in local market:*

Fig. 9 shows the data regarding market availability of sun protective clothing/accessories. It was found that summer coat, scarf, gloves were very commonly available and used by more than 28 per cent of the respondents followed by caps/hats and socks by equal number of respondents.

**Variety available in textile material:**

Data regarding the variety available in textile materials to make choice in sun protective clothing/accessories revealed that majority of respondents (66.66%) had material choice in selecting sun protective clothing/accessories, while 24.44 per cent of respondents

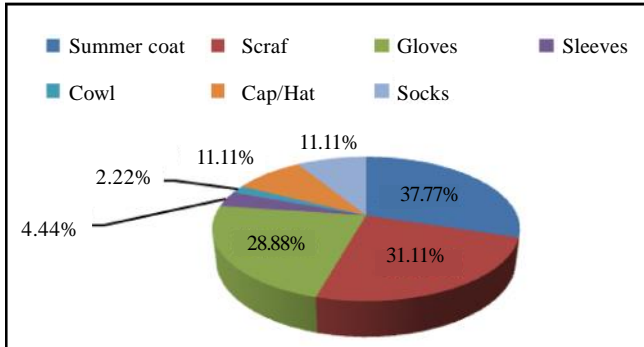


Fig. 9 : Market availability of sun protective clothing/accessories

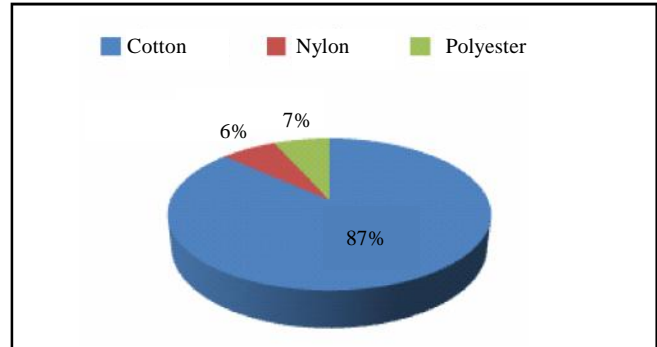


Fig. 11 : Material in which clothing available in the market

were not satisfied with the variety available in the local market to make good choice. Very few of the respondents said that sometimes they could make good choice (Fig. 10).

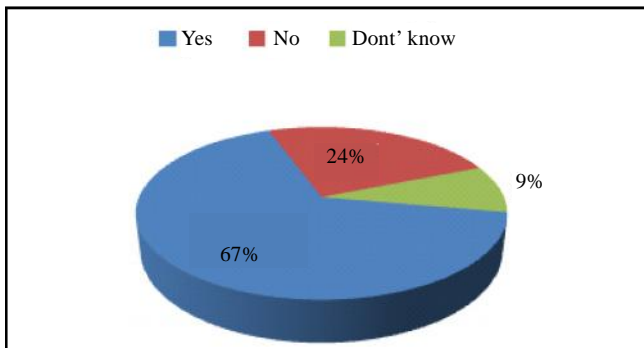


Fig. 10 : Variety available in textile material in sun protective clothing/accessories

**Type of material used in sun protective clothing/accessories:**

Material in which sun protective clothing is available in market was also explored by the researcher and it was reported by the respondents that pure cotton, blended material and synthetic, *i.e.* polyester is commonly used in sun protective clothing/accessories. Data in Fig. 11 revealed that majority of respondents (86.66%) responded that the maximum sun protective clothing was available in cotton material and availability of blended fabric and polyester clothing was marked by an equal percentage of respondents, *i.e.* 6.66 per cent only.

**Availability of colours and prints in sun protective clothing/ accessories:**

The data regarding availability of colours and prints in sun protective clothing/ accessories in the market has

been presented in Fig.12. It shows that, majority of respondents (51.11%) reported about non-availability of good colours and prints in sun protective clothing/accessories and was found dissatisfied. On the other hand remaining respondents were quite satisfied with the colours and prints available in Udaipur market.

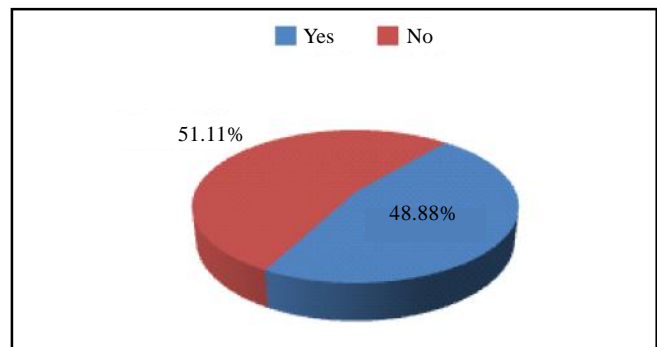


Fig. 12 : Availability of colours and print in sun protective clothing/accessories

**Satisfaction from available sun protective clothing:**

In general, the respondents were asked to reveal their opinion about satisfaction with available clothing and accessories in the market and it was found that only 35.55 per cent of respondents were satisfied with the type of clothing/accessories available in market while remaining majority of the respondents (64.44%) were dissatisfied and expressed the need of having wider variety to make good choices in outer wear clothing providing better sun protection.

Hussain and Jahan (2010) also reported that in India there is need to design special clothing for Indian condition for effective UV protection (Fig. 13). Farmers and outdoor workers are less aware about the hazardous effect of UV radiation, there is need to aware them

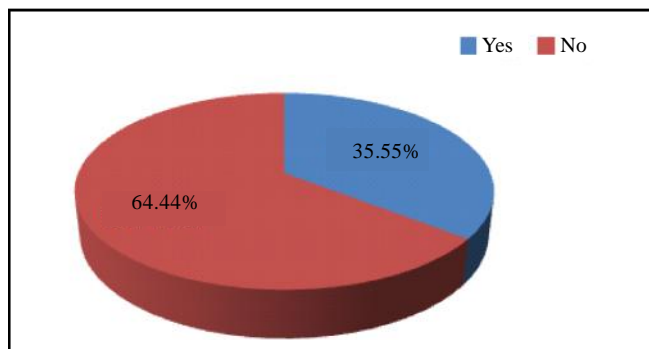


Fig. 13 : Satisfaction from available sun protective clothing / accessories in the market

(Hussain and Jahan, 2010).

### Conclusion :

Ultraviolet rays contained in sunlight pose a major stress and risk potential for the human skin. The risks posed by ultraviolet radiation have become more dangerous in recent years as the whole world is suffering from all kinds of pollution. Findings revealed that respondents of the study were well aware of the harmful effect of UV radiations and majority of them were making use of clothing/accessories in the form of gloves sunglasses, summer coat, scarfs, sleeves, etc. to get sun protection. However, the market availability of sun protective clothing /accessories was not found satisfactory. Majority of respondents were also not satisfied with the variety of colours, prints, materials and also with the type of clothing /accessories available in the market for sun protection. Clothing with specific design parameters including styling appropriate to full coverage of the skin can provide better sun protection. Hence, there is need to develop appropriate sun protective clothing/accessories using appropriate textile materials with required characteristics to provide

adequate protection to users besides educating the masses also on those features to avoid the occurrence of health problems due to UV exposure of sunlight.

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