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FROM THE EDITOR'S DESK

It is a pleasure to publish the present issue of e-journal of The Indian Journal of Home Science containing research papers from various specializations of Home Science. This is an official publication of Home Science Association of India where the members get an opportunity to publish papers free of cost. It is a "blind Peer Reviewed" journal wherein experts in the relevant specializations review the research papers. Its editorial board members are eminent academicians from various parts of the country.

The field of Home Science has developed a lot keeping pace with the present day world. Home Scientists have made place in the competitive professional world and have made the field more visible. Home Science has a great potential to develop further in future. Each one of us needs to think and work for taking it to still remarkable heights through innovations in research and teaching. We must carry out more researches, the findings of which would have far reaching effects. Research work can be shared through this Journal with other scholars. Cumulatively, we shall continue to have great impact on the systems, ranging from family to the world.

The Editor

PROF. MANEESHA SHUKUL

THE HOME SCIENCE ASSOCIATION OF INDIA

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***JALI* OF SARKHEJ ROZA: AN INSPIRATION FOR TEXTILE SURFACE DEVELOPMENT**

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ABSTRACT

India is a country, which has lots of monuments in its length and breadth, but also several lesser-known monuments in different architectural Islamic styles, which can be made popular. Historic buildings and their designs have always been a foundation of creativity to young textile designers and crafts persons. One such source for inspiration is the matchless feature of Sarkhej Roza constructions; the incredible *Jali* in its numerous patterns. The study undertaken was to explore the Sarkhej Roza *Jali* as a source of inspiration for textile designing and its market analysis. The objective of the study was to explore the structural and decorative design techniques for a given *Jali* design to create textile surfaces by translating the positive space (Used area) and negative space (Unused area) of a *Jali* design into foreground of the textile surfaces that is depicted in white (Category A) and blue (Category B) respectively. The opinionnaire was formulated to collect consumer preference for best textile surface technique. Total sixteen textile surfaces were created for a single *Jali* design. Eight samples consisted of structural design and eight samples of decorative design inspired from the foreground and background of the *Jali* design. These were displayed in well lit room for evaluation by potential consumers. Analysis of data was done using frequency, percentage and weighted mean scores and presented in tables and graphs. The findings of the study elucidated that the textile surfaces created using beadwork (structural design technique) had the highest appeal in both Category A and Category B. In decorative design technique, Appliqué work in both the Category A and B were found to be highly appealing. Knitting Technique of Category A opined the best technique for textile surface of structural design and it was revealed that Block printing Technique of Category A opined the best technique for textile surface of decorative design. Majority of the respondents would like to purchase the products made using beadwork, block printing, appliqué work and stencil printing.

Keywords: *Jali*, Foreground, Background, Structural and Decorative Textile Surfaces.

INTRODUCTION

Jali means net or lattice work in Hindustani (a Persian-Arabic script) as defined by the Saiyyad in his composition 'The *Jali* Wall'. In its architectural form, *Jali* describes a perforated stone screen, usually with an ornamental pattern. Containing minute carved, delicate geometrical and floral designs, these perforated screens were an integral component of Mughal architecture. Constructed primarily using marble or sandstone, their form includes windows, railings, dividers and outer walls which provided ventilation and screening from light, imbuing their surroundings with a calm, cool and airy environment. During the day, as sunlight streams through the *Jalis*, the patterns form magical shadows and reflections that grace the adjacent floors and walls, entrancing and mystifying all who see them (Saiyyad., 2005).

Designers have taken inspiration from a variety of sources all things around them like monuments, nature, architecture, music, historic costumes, rags, museum, artifacts etc.(Dutta (2009), Khan, & Swami, 2016; Kishore et al. 2013). There are numerous ways to implement these sources in textile designing. Designers have always used geometrical principles and forms, recognizing the value of balance, harmony, geometrical precision and symmetry (Malik & Azhar 2015). Introducing designs in textiles can be a way to preserve the culture of a group of community or place and the monument itself and it will be good mode of spreading the uniqueness of Indian art across the globe. Islamic monuments lay more emphasis on geometric pattern, calligraphy and architecture. As a sacred structure of the Islamic faith, the Sarkhej campus observes the tenets of the religion and these notions are reflected in the principles of its architecture (www.sarkhejroza.org). A significant feature of Sarkhej Roza is the incredible *Jali* in its numerous patterns that inspired the researcher to take the study further.

The review of literature for the concerned study was presented in the areas of theoretical review and related research review. The Theoretical review concentrated on the history, *Jalis*, Structural design and Decorative design. The related review consisted of design inspiration and innovation.

The purpose of the study was to explore the *Jali* design with different techniques as textile surfaces and evaluating the market acceptability of the techniques. Thus, the study would provide unique and creative textile surfaces to consumers for mass production or creating exclusive products.

The present study was conducted to fulfill the following **objectives**:

1. To translate selected design of Sarkhej Roza *Jali* design as textile surfaces.
2. To evaluate the textile surfaces for its market acceptability.

The **limitation** of the study was craftsmanship of the textile surface was dependent on skill of the artisan.

METHODOLOGY

The study undertaken was to explore the Sarkhej Roza *Jali* as a source of inspiration for textile designing. There can be different non-conventional methods other than the usual method

like weaving to create interesting textile surfaces, which were explored keeping the design constant and translated into structural and decorative textile surface.

A purposive selection of the aesthetically appealing *Jali* design having both floral and geometric forms was done to understand how various techniques occur in both organic and angular components present in the design. The researcher explored various techniques to create textile surface. In the structural design four hand techniques were explored i.e. Bead Work, Crochet, Knitting and Tatting. Four hand techniques were explored for decorative design, too, which included: Applique Work, Block Printing, Embroidery and Stencil Printing.

Design Inspiration:

An observation of the collection of pictures of *Jalis* placed on the Inspiration board was that when light falls on the *Jali* its design area appears bright and the background is dark and vice versa if the *Jali* is seen against light the design appears dark and the background bright. Thus Inspiration board (Plate -1) helped the researcher to select the space and light element for developing textile surfaces. In the development of textile surface White colour was selected for foreground and Indigo colour was selected for background in category A (Fig.- 1). In category B, foreground and background were reversed. During ancient times in Sarkhej village there were dyers practicing indigo dyeing on textiles, this reason motivated the researcher to use indigo colour along with white.



Plate 1: Inspiration Board

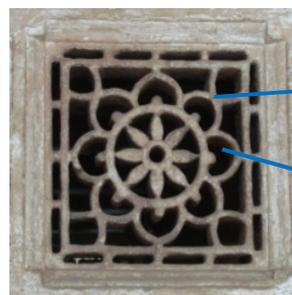


Figure 1: Jali Design

Foreground: The design itself is called the foreground or the positive space (Used space).

Background: The base or the plane on which it lies is the background or negative Space. Background is, therefore, the space around the design (Unused space).

Development of Textile Surface

Total sixteen samples were prepared (Table 1). Eight samples consisted of structural design and eight samples of decorative design. In structural design four samples are of category A and another four samples with category B and same with decorative design were developed.

Table-1: Plan and Categorization of surface techniques

Textile Surfaces – I		Textile Surfaces – II	
Structural Design		Decorative Design	
Category (A) - (Inspiration – Foreground – light)		Category (A) - (Inspiration – Foreground – light)	
Category (B) - (Inspiration – Background – shadow)		Category (B) - (Inspiration – Background – shadow)	
Technique		Technique	
a.	Bead Work	a.	Appliqué work
b.	Crocheting	b.	Block Printing
c.	Knitting	c.	Embroidery
d.	Tatting	d.	Stencil Printing

Market analysis/Acceptance:

An opinionnaire was developed for the evaluation of aesthetic appeal for the created textile surfaces. Self-designed invitation cards were made to invite all the teachers and Post Graduate students of various departments of Faculty and Family Community Sciences. Total sixteen developed textile samples using structural and decorative design in foreground and background concept were displayed in well-lit Seminar room of Clothing and Textiles Department. The respondents evaluated the created surfaces for its aesthetical appeal, best three techniques and preference to purchase the products made using structural and decorative design techniques. Analysis of data was done using frequency, percentage and weighted mean scores and presented in tables and graphs.

The collected data were coded, tabulated and analyzed using suitable statistical tools to draw the meaningful interferences.

Frequency: Frequency was calculated and used to calculate weighted mean scores.

Percentage: Percentages were calculated for analysis of data regarding opinion of consumers about the textile surfaces techniques.

Weighted Mean Score: To quantify the data regarding the opinion of consumers for developed textile surfaces. Weighted mean scores were calculated and ranks were allotted. Weighted mean score was calculated using the following formula:

$$\text{Weighted Mean Score} = \frac{W_1X_1 + W_2X_2 + \dots + W_nX_n}{\text{Total number of respondents}}$$

Where,

W1, W2-----Wn are weights

X1, X2----- Xn are frequency

RESULTS AND DISCUSSION

The finding of the study have been stated and discussed in the following subsections:

Development of Textile surfaces

Selected *Jali* design was used for development of textile surfaces using Structural and Decorative surface techniques as listed in Table 1.

In category A, white colour depicted the design area and blue colour served as the background where as in category B, the blue colour depicted the foreground (design area) and white colour as the background. (Plate - 2 and 3)

However, there was a limitation in creating background for the tatting and crocheting samples due to their open structures and therefore in category A the design area (foreground) was made in white and in category B the design area (background) was made in blue. (Plate 2b and 2d)

Textile Surface Development using Structural Design Techniques

The *Jali* design of size 5”x 5” was made on a graph paper using the lead pencil to show the design areas Foreground (White Colour) while the rest of the area into that design was considered as background (Indigo Colour) area.

Bead Work: The final sample was made by the artisan using Bugle white and indigo colour beads with wire thread and sewing needle. The sample was made by sixty vertical beads in 1 column x sixty horizontal beads in a row.

Crocheting: The final sample was made by artisan using Anchor indigo colour threads with 5 number size of tulip crocheting needle. The sample was made using chain stitch, Double crochet stitch and Half double crochet stitch.

Knitting: The final sample was made by artisan using Anchor white and indigo colour threads with 12 number size of knitting needle. The sample was made using Stockinette stitches (Jersey Knit).

Tatting: The final sample was made by artisan using Anchor indigo colour threads with tatting shuttle. The sample was made using the basic stitch. The same samples were made for each technique into inverse order of colour.

It was observed that the size of the samples could not be retained as decided i.e. 5” x 5” due to the basic characteristics of the technique and material used i.e. in bead work beads are rectangular in width so the result shown that the sample was rectangle. Also, the background of *Jali* design as inspiration was not easily translated for all the structural techniques.

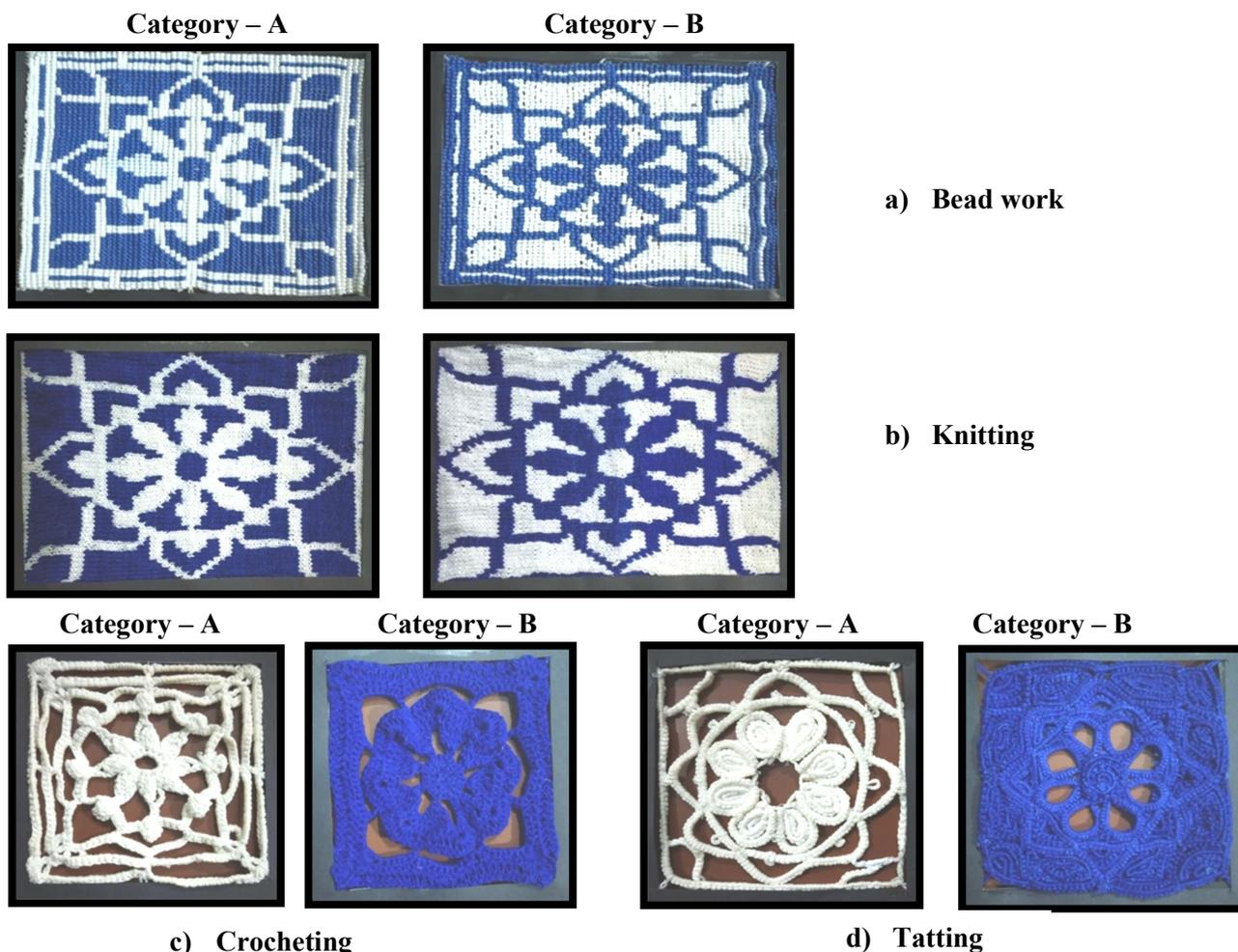


Plate 2: Samplers of developed Structural Textile Surfaces

Textile Surface development using decorative design techniques

The *Jali* design of size 5”x 5” was made on a paper using the lead pencil to show the design areas Foreground (White Colour) while the rest of the area into that design was considered as background (Indigo Colour) area.

Applique Work: The final sample was made by the artisan using white and indigo colour cotton fabric with sewing thread and sewing needle. The paper design was cut leaving a margin in design (Foreground) area. Then it was traced on a white colour cotton fabric and cut. The 5” x 5” indigo colour fabric was used as base for sample. The foreground design was placed on the base fabric then the margins were folded inside and stitched using blind hemming stitch.

Block Printing: A wooden block of 5” x 5” was made by the artisan of the selected design. Block printing was done on indigo blue colour fabric using white acrylic colour.

Embroidery: The final sample was made by the artisan using white and indigo colour cotton fabric with anchor cotton embroidery thread and needle. The design was traced on an indigo cotton

fabric. Embroidery was done as foreground design using chain stitch using white colour Anchor cotton thread on a blue fabric.

Stencil Printing: The design was traced on transparent plastic sheet. Stencil was made through cutting foreground i.e. the design area. The stencil was placed on an indigo colour cotton fabric. Then after dipping the sponge into white Acrylic colour it was imposed on the indigo colour fabric. The final sample was ready after getting dry.

The same samples were made for each technique into inverse order of colour.

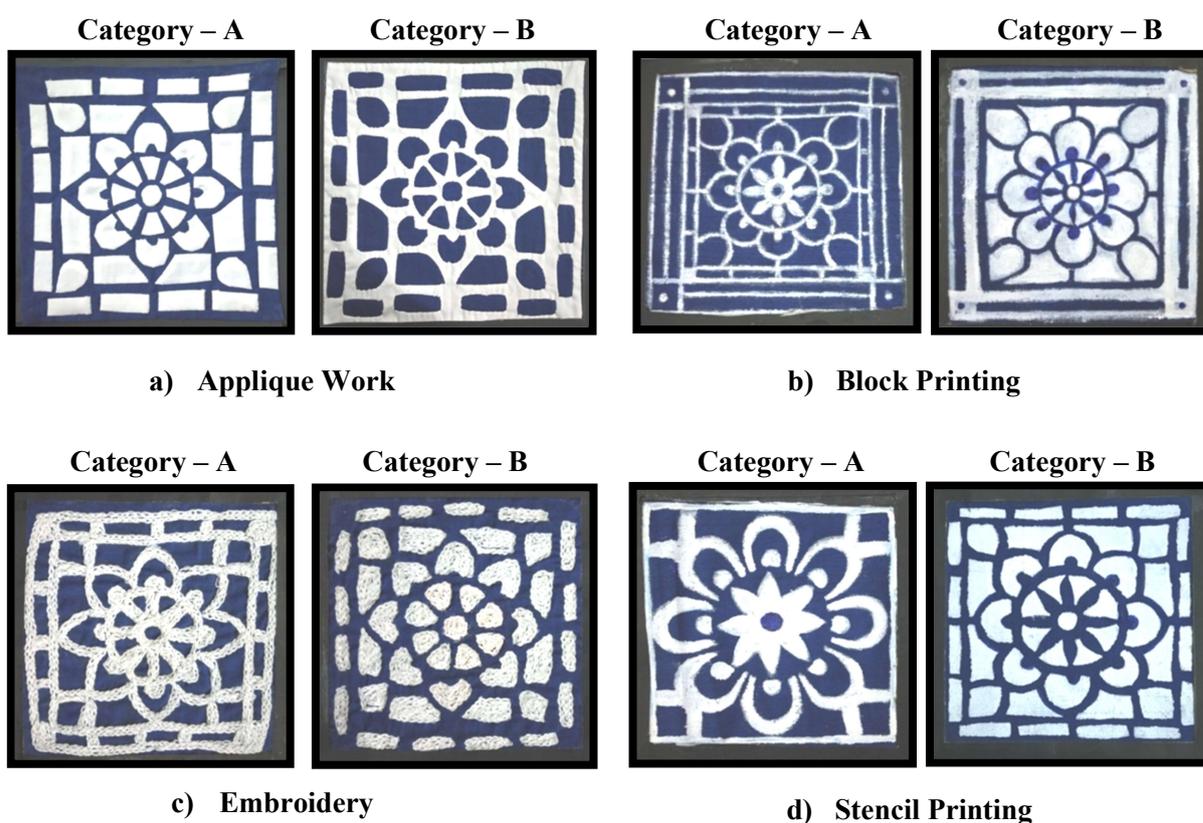


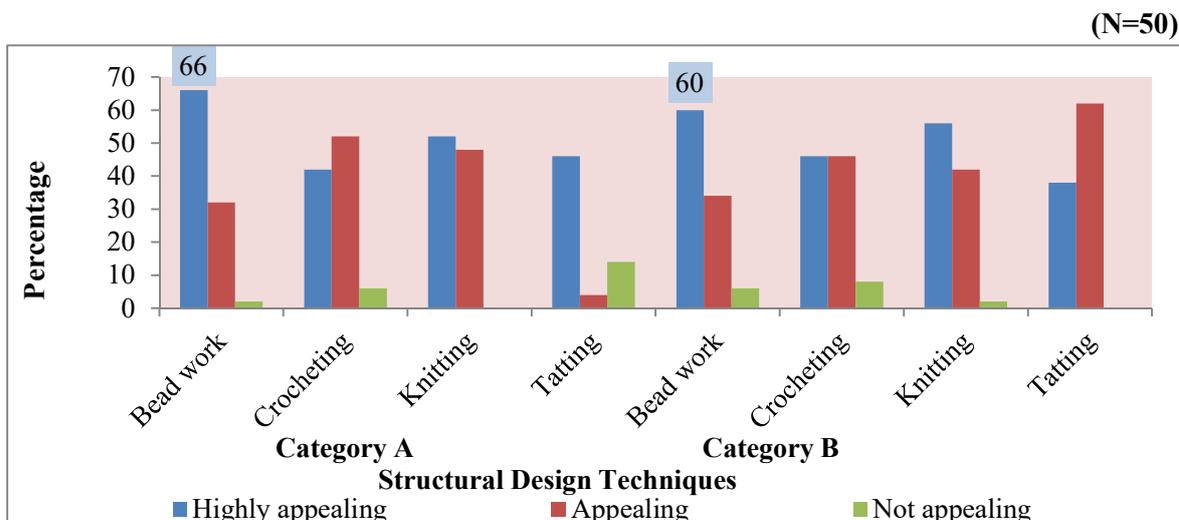
Plate 3: Samplers of developed Decorative Textile Surfaces

Market Analysis

Sixteen samples of size 5” x 5” were developed and their evaluation was done through an opinionnaire. The results were analyzed on the basis of Frequency, Percentage and weighted mean score.

The results revealed that, 85 per cent of the respondents were not aware about the Sarkhej Roza, which indicated that it was a lesser-known monument; greater the scope of bringing some novelty in Textile Designing through its inspiration.

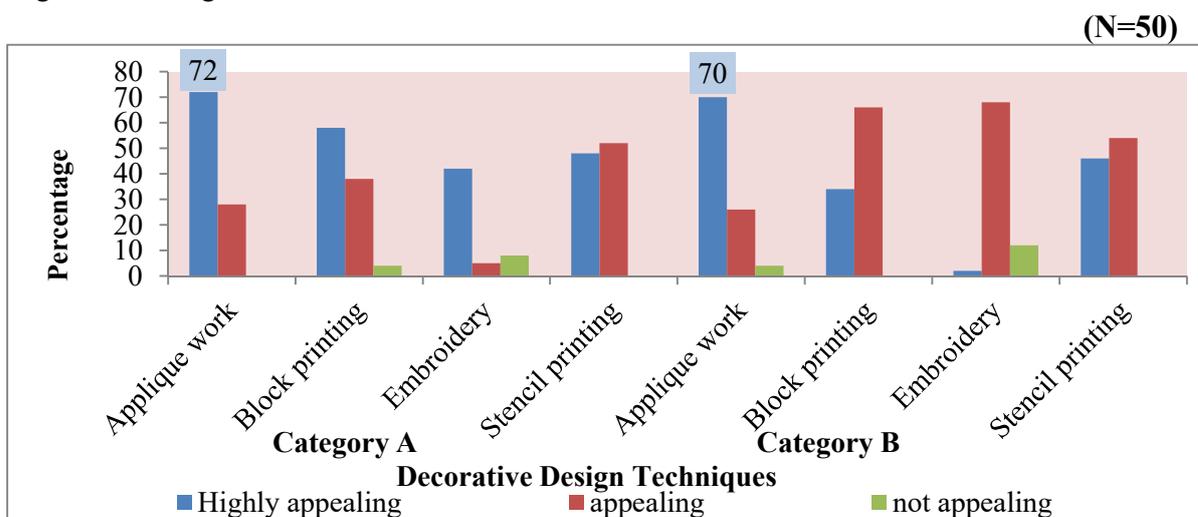
The researcher explored various techniques to create textile surface. Total sixteen samples were prepared. Eight samples consisted of structural design and eight samples of decorative design in both the category. Category A with foreground concept and another category B with background concept were created.



Graph-1 Opinion regarding the aesthetic appeal of structural textile surfaces

The data in the Graph-1 revealed that nearly two-third of the respondents found textile surface created by Bead work in both Category A as well as Category B to be highly appealing i.e. 66 and 60 per cent respectively followed by Knitting (52 and 56 per cent) and Crocheted (42 and 46 per cent) textile surfaces. However, only negligible i.e. less than five per cent respondents did not find the bead work surface appealing. The results presented in the graph also revealed that Crocheting Technique of Category A appealed to more than one-half of the respondents. Nearly two-third of the respondents found the Tatting Technique of Category B to be appealing. On the whole majority of the techniques were found to be highly appealing or appealing at least by 32 to 66 per cent of respondents with the exception of Tatting surface created in Category A with a little above 10 per cent respondents opined it to be not appealing.

The result thus indicated that the surfaces with visible foreground and background were found to be more appealing than the surfaces which had no visible background and appeared as open structures such as Crocheting and Tatting. These can also be attributed to the distinct visibility of design aesthetics of the Bead work and Knitted surfaces and its resemblance to the original *Jali* design which was beautiful in itself.



Graph-2 Opinion regarding the aesthetic appeal of decorative textile surfaces

The data presented in Graph-2 elucidated that in the opinion of nearly three-fourth of the respondents Appliqué works of Category A (72 per cent) as well as Category B (70 per cent) was highly appealing. It was also revealed that about 32 to 68 per cent respondents found all decorative surfaces to be appealing except the textile surface created using Embroidery technique in Category A (5 per cent). In contrast, more than two-third i.e. 68 per cent of the respondents found the textile surface created using Embroidery in Category B to be appealing. There were 8 to 12 per cent respondents to whom Embroidered textile surface did not appeal in both Category A and Category B respectively.

The surface created by embroidery technique failed to appeal the respondents probably due to its coarse and uneven texture. Also, the design lacked unity and sharpness of shapes especially in Category B. The workmanship of Applique work samples was excellent which would have also contributed to its maximum aesthetic appeal.

Selection of best Techniques for Textile Surface Development

Preferences of respondents for techniques of developed structural and decorative textile surfaces are presented in Table-3 and Table-4.

(i) Structural Design Techniques for Textile Surface Development

The data presented in Table-4 revealed that in structural design technique as per respondents preferences, Knitting Technique of Category A scored the highest mean score (1.78) and was ranked I followed by Bead work of Category B ranked II with second highest mean score (1.72) and Bead work of Category A scored the III rank (1.58).

Table-4 Opinion regarding Structural Design Technique that created the best Textile Surface (N=50)

Structural Design Technique		Weighted Mean Score	Rank
Category A	Crocheting	0.92	6
	Tatting	1.34	4
	Bead Work	1.58	3
	Knitting	1.78	1
Category B	Crocheting	0.92	6
	Tatting	1.14	5
	Bead Work	1.72	2
	Knitting	0.6	7

(ii) Decorative design Techniques for Textile Surface development

From the Table-5 it was revealed that Block printing Technique of Category A got I rank by scoring highest weighted mean score (2.26) followed by Applique technique of Category A with the second highest Weighted mean score (2.24) at II rank and the Applique work of Category B scored third highest Weighted mean score (1.26) ranked III.

Table 5: Opinion regarding Decorative Design Technique that created best Textile Surface

(N=50)

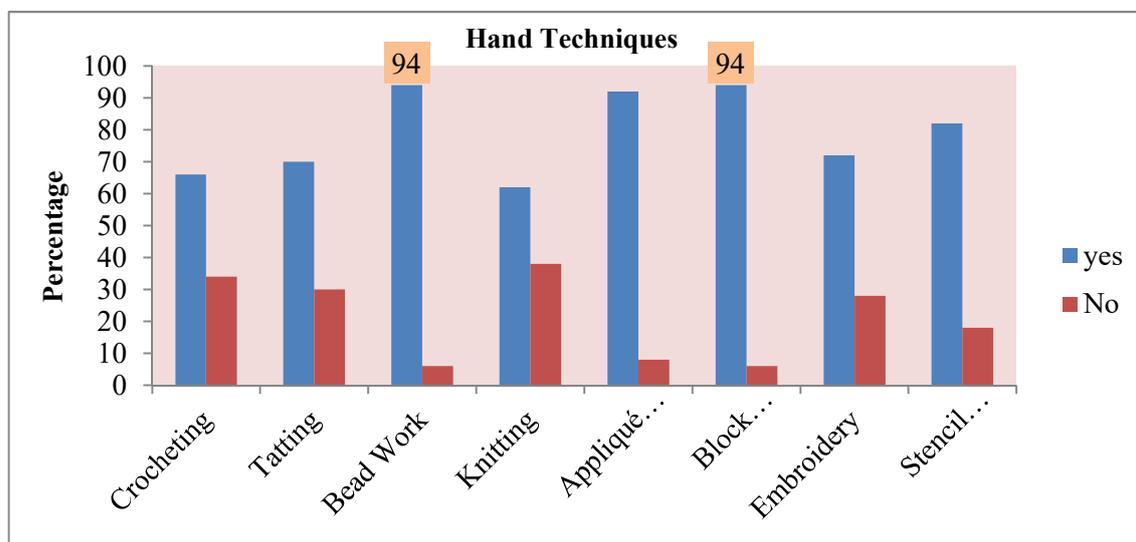
Decorative Textile Surfaces		Weighted Mean Score	Rank
Category A	Appliqué work	2.24	2
	Block printing	2.26	1
	Embroidery	0.8	8
	Stencil printing	0.96	5
Category B	Appliqué work	1.26	3
	Block printing	0.18	7
	Embroidery	0.74	6
	Stencil printing	0.98	4

Lighter design against a darker background surface fetched greater scores, with the exception of bead work and stencil printing technique which was found to be best for lighter background in comparison to darker background.

(iii) Assessment of developed textile surface technique

The respondents were asked to share their readiness to purchase products made using these eight hand techniques.

(N=50)



Graph-3 Opinion regarding readiness to purchase products in these hand techniques

The data from Graph-3 revealed that majority of the respondents (82 to 94 per cent) would like to purchase the products made using the techniques of bead work, block printing, appliqué work and stencil printing and 62 to 73 per cent respondents prefer to purchase products made using techniques of Embroidery, Tatting, Crocheting and Knitting. Though respondents

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found the textile surface made by knitting to be highly appealing, the graph above revealed that more than one-third respondents would not like to purchase the products made using crocheting and knitting technique, followed by below 30 per cent of respondents who would avoid purchasing products made using Tatting and Embroidery. The market preference further suggested decorative design techniques were better preferred in comparison to structural design techniques with the exception of bead work.

CONCLUSION

The study revealed that, there is a vast scope that one can learn from one's culture and heritage. Many art forms exist that can be explored to develop textile surfaces. Majority of the consumers would like to purchase the products made using beadwork, block printing, appliqué work and stencil printing.

This research would expedite the renewed stream of ideas in the area of textile design by constructing novel and more resourceful connections between past and present. With the new advanced ideas, the potentials to redesign the magical old classical designs, there is an incredible scope in the form of Sarkhej Roza *Jalis*. This study discovered the use of historic *Jali* design of Sarkhej Roza. The textile surfaces can generate abundant variations, which may bring in series of reconstruction of heritage designs in form of contemporary creations.

ACKNOWLEDGEMENT

We would like to thank Ms. Heena Dalvadi, Ms. Manisha Patel, Aishvi Patel and Mital Patel for helping in the development of samples which was an integral part of this study.

RECOMMENDATIONS

1. The classical designs of the ancient Monuments should be preserved to re-vitalize and re-interpret the age old outstanding designs.
2. Young designers should be given support to examine the influence of historical and social forces on modern designing.
3. The developed design can also be employed for designing niche textile products through utilizing the results of this study.
4. The developed design can be given to entrepreneurs for mass production to help them to establish micro enterprise for developing a wide range of textile products.

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CHITOSAN BASED PRINT PASTE FOR TEXTILE PRINTING: A NOVEL ECO-FRIENDLY APPROACH

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ABSTRACT

Natural materials are always a statement of restrained elegance. An increasing demand towards natural organic products has rejuvenated the interest in using thickener made from natural raw material. However, for pigment printing only synthetic based thickeners are being used. This paper aims to produce a natural thickener via adding of chitosan and gum Arabic. Experiments were conducted on various ratios of chitosan and gum Arabic in the thickener to be used for pigment printing on various textile substrates, viz., cotton, terecot and polyester. Samples were printed by screen printing method. It was noted that, samples printed with only gum showed a very low color value. However, with increased concentration of chitosan in the blend, k/s value significantly increased. Interestingly, samples printed with chitosan and without gum showed the highest color value. A similar trend was also observed in the assessment of fastness properties. Chitosan/gum Arabic blend printed samples showed increase in fabric stiffness.

Keywords: Chitosan, gum Arabic, chitosan/gum Arabic blend, conventional synthetic pigment printing.

INTRODUCTION

The beginning of art of decorating fabric by the stamping or printing is found from the earliest periods. Pigments are molecular aggregates, insoluble in the media to which they are subjected during application and use. They have no substantivity for the fibre and in pigment dyeing and printing their fixation is achieved by the use of a binder which encloses them and provides a bond between pigments and the fibre (Storey, 1978). The advantages of pigment printing are well known and the process has grown in popularity worldwide in recent years as it offers several advantages over other styles of printing. Thickening agents form an essential part of any printing process. Thickeners used in textile printing are generally high molecular weight polymers. These acts as vehicles for carrying dyestuffs, chemicals and other printing auxiliaries to the textile material during printing (Clarke, 1977; Narkar & Narkar, 1973). Various kinds of gums are popularly being used in textile printing. However, for pigment printing only synthetic based thickeners are being used (Miles, 1994).

In the present investigation, the possibility of printing textiles using pigment with the natural gum namely, gum arabic was experimented upon. Gum Arabic is a natural gum obtained as exudations from shrubs or trees- principally varieties of acacia (Storey, 1978). Its blend with other natural material, namely chitosan (which considered as bio-waste) was explored.

Chitosan is a cationic polyelectrolyte, a natural biopolymer with a molecular structure very similar to chitin and cellulose (Figure1). Chitin and chitosan are most abundant naturally occurring polymers, ranked second after cellulose in terms of availability to the extent of over 10 giga tons (1×10^{13}) annually (Jennings & Bumgardner, 2016; Cheba, 2011). Chitosan is obtained by alkaline N-deacetylation of chitin, the second most abundant polysaccharide. Chitosan is commercially available from plentiful, renewable sources, primarily waste from the shellfish industry (Kim et al, 2006; Kim 2010). Chitosan has been used for various textiles finishing applications but no attempt has been made to use it as a thickener for printing textiles substrates.

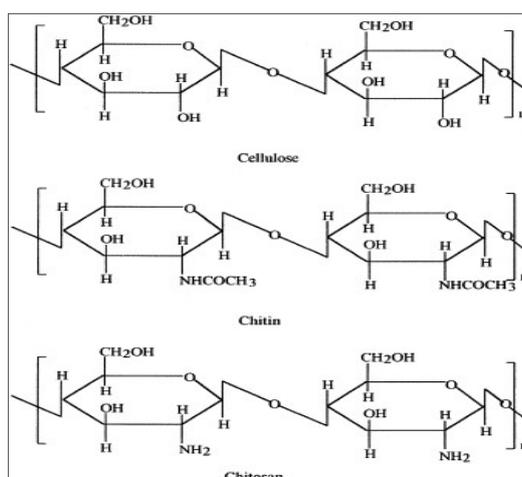


Fig 1: Chemical structures of cellulose, chitin and chitosan

Thickener which is procured naturally may contribute to the environment wellness. It will be more eco-friendly and will not create any sort of health hazards to the wearer. Thus, the paper aims at application of natural thickeners viz., gum and chitosan for pigment printing on textile substrates.

Objectives of the study:

- To study the application of chitosan and chitosan/gum blend as a thickening agent for printing textile substrates
- To assess the fastness properties of the chitosan and chitosan/gum blend thickener
- To compare chitosan and chitosan/gum blend thickener with conventional thickening agents used for printing

MATERIALS AND METHODS

List of fabrics and their details

Cotton, terecot and polyester fabrics were taken for experiment. The specifications of textile substrates are given in the Table 1.

Table 1: Details of textiles substrate

Name	Cotton	Polyester	Terecot
Weave	Plain	Plain	Plain
Color	White	White	White
GSM (gm/m ²)	117	79	110
EPI	113	117	95
PPI	80	79	80

List of chemicals used

Sodium hydroxide (Fisher scientific), wetting agent (Turkey Red Oil), Lissapol, Pigment (Texcron pigment emulsion), stock paste, diammonium phosphate (Merck specialities Pvt. Ltd.), Milk binder (Bell), Chitosan flakes (Heppe Medical Chitosan GmbH) and Acetic acid (Fisher scientific), Gum Arabic (Pioneer), Pigment (Texcron pigment emulsion).

Preparation of textile substrate for printing

The fabrics obtained from market were desized and were then scoured using the procedure as follows:

(a) *Cotton*: - NaOH pallets (4% o.w.f), 2-3gm/l of lissapol and TRO (2gm/l) were added to the water (MLR 1:40). The solution was heated to 60-70⁰C and then desized sample was added. The temperature was increased to 100⁰ C (boil) and continued boil for 1 hour. Fabric was then removed, washed and treated with dilute acetic acid to neutralize and further washed and dried.

(b) *Terecot* was scoured using the same process as of cotton scouring.

(c) *Polyester*: - TRO (1-2gm/l) and lissapol (1.5gm/l) were added to the water (MLR 1:40). The solution was heated and then sample was added. The temperature was increased about 70⁰C in 20-30 mins and continued it for 30mins. Fabric was then removed, washed and dried at room temperature.

Preparation of gum Arabic paste for printing

The solution was prepared by dissolving the gum Arabic crystals in water. Amounts of gum Arabic and water were used in the ratio of 1:1. It takes 24 hours to completely dissolve gum Arabic crystals in the water.

Preparation of chitosan solution

The chitosan solution was prepared in 1% acetic acid solution (Goyal, 2016). The concentration of chitosan to be used as a thickening agent, various concentrations viz, 2%, 2.5% and 3% were

experimented upon. As per the visual inspection of viscosity, chitosan concentration of 2.5% was optimized and used for further experiments.

Preparation of stock paste for pigment printing (synthetic conventional or SC method)

Stock paste was prepared by dissolving urea (25gm), di- ammonium phosphate (25gm), kerosene oil (750 ml), milk binder (100 ml) and water (100ml) for 1kg quantity. It was prepared by mixing on high shear mixture for 30 minutes.

Pigment printing: Print pastes and process

Textile substrates were printed by using different kinds of print paste, prepared using different thickening agents.

(a) *Synthetic conventional pigment print paste (SC/PP)*: The synthetic conventional print paste was prepared with the required amount of pigment colour, binder and diammonium phosphate and was added to the stock paste to make upto 100 parts.

(b) *Chitosan/gum blend print paste*: The print paste using chitosan/gum blend was prepared using different concentrations combinations along with pigment. The details are given in the Table 2.

Table 2: Details of print paste

S.No	Composition	Details
1	Conventional print paste	Pigment - 10parts Binder - 15 parts Diammonium Phosphate - 5 parts Stock paste - <u>x parts</u> 100 parts
2	Chitosan/gum blend print paste	Chitosan - 80 parts Gum Arabic - 10 parts Pigment - <u>10 parts</u> 100 parts
3	Chitosan print paste	Chitosan - 90 parts Pigment - <u>10 parts</u> 100 parts

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The textile substrates were screen printed. Printing was carried out on a flat, solid, table covered with a layer of resilient felt and washable blanket. A blotting paper was put on the blanket and the textile substrate placed on the blotting paper and pinned. The screen kept flat and print paste was then spread across the screen either along the length or across the width by squeeze (wooden handle with rubber). The fabric was printed, dried at 60-70⁰ C for 10 mins and cured at 150⁰C for 5 minutes in an oven. Samples were cold rinsed, followed by soaping at 50 ⁰C for 5 mins. Samples were then dried at room temperature.

Evaluation of printed samples

Printed samples were evaluated in terms of visual inspection, colour measurement (K/S values, L*a*b* and L*c*h*), fastness and physical properties.

The K/S values were measured on Minolta colour eye 3220 spectrophotometer. Before measuring K/S values, the instrument was calibrated. K/S values were calculated using Kubelka and Munk equation mentioned below:

$$K/S = (1 - R)^2 / 2R$$

Where,

R – Reflectance at specific wavelength, K – Absorption coefficient, S – Scattering coefficient

L* value denotes the lightness or darkness of the sample. a*, b* are the co-ordinates of the colour, and c* is its resultant. c* is the chroma of the hue, which means it is the intensity. The value of c* depicts achromaticity

Printed samples were tested to wash fastness by using laundrometer according to BS Washing test 1006 COI (ISO 1). Light fastness was tested by using MBTF light fastness test according to BS 1006 (1978). Fastness to rubbing was done by using crock meter according to BS 1006 no. X12. Tensile strength of the samples was assessed as per standard and bending length of the sample measured by the Shirley stiffness tester.

FINDINGS AND DISCUSSION

Storage stability of print pastes

Storage stability of all the print paste as mentioned above was visually assessed, for 1 hr, 1 day, 5 days and 10 days. It was observed that all the print pastes remain absolutely stable, as were observed for 10 days.

Colour assessment of pigment printed textile substrates using different print pastes

In all the textile substrates it was seen that with the increase in the concentration of chitosan in the blend of print paste, K/S values were also increasing. Terecot sample printed with 80parts chitosan showed K/S value of 7.4. The K/S value significantly increased to 17.2, when terecot

sample was printed without gum. Figure 2.2 shows various printed textile substrates. Similar trend was also seen in cotton and polyester samples (Table 3). The K/S values of all the textile substrates printed with only chitosan were compared. Insignificant difference was observed between cotton and terecot, where the values were 17.2 and 17.3. However, slightly lower value of 15.6 was obtained in case of polyester sample, when printed with only chitosan pigment print paste (Figure 2.1). Interestingly, in all the samples, on comparing with synthetic conventional pigment paste, samples treated with only chitosan showed higher values of K/S

Table 3: K/S and colour value of printed textile substrate with different thickeners

Print paste	K/S	L*	a*	b*	c*	h*
Tercot sample						
Control	0.03	89.43	05.00	-13.63	14.52	290.17
80CS/10GA/10 P	7.49	38.30	38.64	05.50	39.03	08.07
90CS/0GA/10P	17.21	33.62	42.31	18.79	46.31	23.93
SCPP	11.35	35.79	42.00	12.70	43.91	16.84
Cotton sample						
Control	0.02	91.53	01.90	-06.43	06.70	286.47
80CS/10GA/10 P	10.06	36.80	44.08	10.93	45.42	13.92
90CS/0GA/10P	17.33	33.26	39.90	21.98	45.56	28.84
SC/PP	15.64	33.38	40.84	19.48	45.26	25.486
Polyester sample						
Control	0.05	85.18	05.66	-16.23	17.19	289.27
80CS/10GA/10 P	6.70	39.66	40.34	02.91	40.45	04.13
90CS/0GA/10P	15.61	32.57	36.44	17.71	40.52	25.91
SC/PP	12.92	33.08	36.22	14.51	39.04	21.77

Key: CS- Chitosan. GA- Guam Arabic. P- Pigment. SC/PP- Synthetic Conventional Print Paste. For all the experiments 10gm of pigment was taken. Control: not printed sample.

L* value denotes the lightness or darkness of the sample.

a*, b* are the co-ordinates of the colour, and c* is its resultant.

c* is the chroma of the hue, which means it is the intensity. The value of c* depicts achromaticity

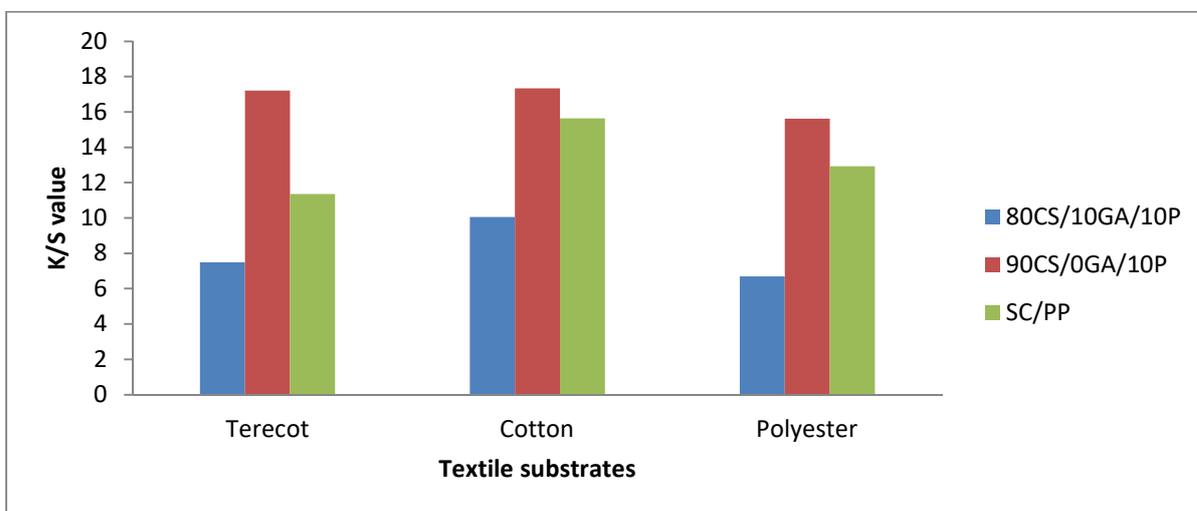


Fig 2.1: K/S value of different textile substrate printed by different thickeners

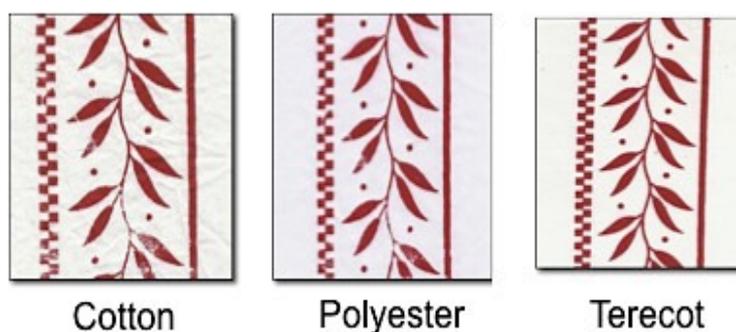


Fig 2.2 Textile substrates printed with 90 parts chitosan/ 0 parts gum arabic/ 10 parts pigment

This indicates that the fabrics printed with chitosan are rich in colour shades and shades obtained are of slightly higher values than the shades obtained from the synthetic commercial thickener.

Assessment of the fastness properties of pigment printed textile substrates

(a) Rub fastness

The rub fastness of all the samples was tested, in both dry and wet conditions. The results are shown in Table 4. The printed samples showed better dry crock fastness in comparison with wet crocking. All the printed samples showed satisfactory fastness to rubbing in both color change and colour staining scale. Further, results of chitosan and its blend with gum showed similar results as synthetic commercial pigment printed textile substrates.

Table 4: Crock fastness rating of pigment printed textiles substrates

Print paste composition	Grey scale	Cotton		Terecot		Polyester	
		Dry	Wet	Dry	Wet	Dry	Wet
SC/PP	CC	4	3	4/5	4	4	4
	CS	¾	3	4	3	¾	3
80CS/0GA/10P	CC	4	¾	4	3	¾	3
	CS	3	½	3	1	¾	1
90CS/0GA/10P	CC	4	3	¾	2/3	4	3
	CS	3	1	¾	1/2	2/3	1

Key:- CC - Colour change, CS - Colour stain, CS- Chitosan. GA- Guam Arabic. P- Pigment.SC/PP- Synthetic conventional print paste.

(b) Wash fastness

The samples were qualitatively rated by using the standardized grey scale for assessing change in colour and staining. The results obtained are presented in the Table 5. The results obtained of conventional synthetic pigment printed sample were very good to excellent and chitosan/gum arabic blend showed good to excellent readings. Some colour stains are observed on the adjacent fabric in chitosan/gum arabic blend printed sample. Chitosan printed sample showed excellent wash fastness rating. There is no significant difference in the wash fastness rating of synthetic conventional pigment printing and chitosan pigment printing.

Table 5: Wash fastness rating of pigment printed textile substrates

Print paste	Grey scale	Cotton	polyester	terecot
SC/PP	CC	4/5	5	5
	SS	4	5	5
	SW	4/5	5	5
80CS/10GA/10P	CC	4	4/5	4/5
	SS	¾	4	4
	SW	5	5	5
90CS/0GA/10P	CC	4/5	5	4/5
	SS	4/5	5	4/5
	SW	5	5	5

Key: CC – Colour change, SW – Stain on wool, SS – Stain on same fabric , CS- Chitosan. GA- Guam Arabic. P- Pigment.SC/PP- Synthetic conventional print paste.

(c) Light fastness

Light fastness of all the samples was evaluated. The samples were rated by using the blue wool samples. The results have been summarized in the Table 6. All the samples showed readings in the range of 7-8, exhibiting excellent light fastness. No difference in the light fastness between conventional synthetic pigment printed and chitosan and its blend printed textile was seen.

Table 6: Light fastness rating of pigment printed textile substrates

Print paste composition	Cotton	Polyester	Terecot
SC/PP	8	8	8
80CS/10GA/10P	7	7	7
90CS/0GA/10P	8	8	8
Key: CS- Chitosan. GA- Guam Arabic. P- Pigment.SC/PP- Synthetic conventional print paste.			

Assessment of the physical properties of pigment printed textile substrates

(a) Bending length

From the results obtained for bending length as shown in Table 7, It is seen that in cotton and terecot fabric, stiffness along the warp direction is more than the weft direction, whereas, in polyester fabric stiffness along the warp direction is slightly less than the weft direction. A significant increase in bending length was observed when all the textile substrates were printed with various thickeners. However, it was seen that **chitosan printed samples has slightly more bending length as compared to synthetic commercial pigment printed textiles**, in both warp and weft directions.

Table 7: Bending length of cotton, terecot and polyester fabrics in warp and weft directions

Sample	Direction	Bending length (cm)
TERECOT SAMPLE		
Control	Warp	1.67
	Weft	1.47
SC/PP	Warp	3.15
	Weft	2.32
80CS/10GA/10P	Warp	3.2
	Weft	2.57
90CS/0GA/10P	Warp	4.0
	Weft	3.25
COTTON SAMPLE		

Control	Warp	2.3
	Weft	1.72
SCPP	Warp	2.87
	Weft	2.52
80CS/10GA/10P	Warp	3.3
	Weft	2.9
90CS/10GA/10P	Warp	4.17
	Weft	3.35
POLYESTER SAMPLE		
Control	Warp	1.5
	Weft	1.72
SC/PP	Warp	3.05
	Weft	2.42
80CS/10GA/10P	Warp	3.45
	Weft	3.1
90CS/0GA/10P	Warp	3.75
	Weft	3.12
Key: CS- Chitosan. GA- Gum Arabic. P- Pigment. SC/PP- Synthetic conventional print paste. Unit- cm.		

b) Tensile strength

Tensile strength is the capacity of a material or structure to withstand loads tending to elongate, as opposed to compressive strength, which withstands loads tending to reduce size. It was evident that tensile strength of control cotton, tercot and polyester fabrics in the warp direction is more than the weft direction. From the results, it was observed that there was insignificant difference in the tensile strength of all printed sample with different print pastes.

CONCLUSION

This study shows that gum arabic as a thickening agent for pigment printing cannot be used successfully. However, when gum arabic was used in combination with chitosan, satisfactory results were obtained. Interestingly, it was observed that chitosan can alone be used as a thickening agent for textile pigment printing. Chitosan/gum blend indicating a good storage stability.

Comparing with synthetic conventional pigment paste, samples treated with only chitosan showed higher values of K/S. These results indicate that colour properties of textile substrate printed with chitosan as a thickening agent are as good as the conventional synthetic pigment print

paste. Colour fastness of printed samples is almost comparable. Chitosan does not show any major difference in values when compared to commercial thickener. But chitosan/gum blend showed some difference when compared to others. Crock fastness of the samples was satisfactory and wash and light fastness was good. Fabric stiffness was observed in chitosan printed sample.

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RECOMMERCE OF PRE-OWNED CLOTHING: AN APPROACH TOWARDS SUSTAINABILITY

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ABSTRACT

There is an increasing awareness amongst consumers to reduce the wastage and reuse as well as recycle products. In view of this, buying of pre-owned goods that are still in good condition and of good quality is an earnest step in right direction. The concept of buying pre-owned has led the consumer of today to make smart buying decisions. It has been reported that recently, in India, attitude towards pre-owned apparel has become positive and it has emerged as a notable segment of the market. The concept of pre-owned market is considered as a space where fashion items that have been previously owned or used, are rented or re-sold by the owner.

The present research was conceptualized to study the retailing of pre-owned clothing and to assess the consumer behavior towards purchase/consumption of pre-owned clothing and the factors influencing it. For this purpose, a sample size of 200 consumers of pre-owned clothing was taken from Delhi region; this was further categorized into 100 men (18-28 years); (29-45 years) and 100 women (18-28 years); (29-45 years). Purposive sampling technique was deployed. A questionnaire was designed for data collection. An interview schedule was also developed to study the retail outlets dealing in pre-owned clothing..

Quantitative and qualitative data obtained was analyzed, compared, and collated to validate the findings. Findings revealed that, the concept of pre-owned goods has recently surfaced in the market, and consumers were showing interest towards their purchase and consumption. The primary reason, as expressed by consumers, for buying and hiring pre-owned clothing is significantly reduced cost. A fashion product can be made to last for longer duration by using and reusing it. Thus, the acceptance of pre-owned clothing articles is contributing towards the circular economy and is being viewed as a prominent approach towards sustainability and eco friendliness.

Keywords: Pre-owned, Consumer behaviour, Re-commerce, clothing

INTRODUCTION

The term consumer behaviour may be defined as the behaviour that the consumer displays in searching for, purchasing, using, evaluating, and disposing of products, services and ideas, which they expect, will satisfy their needs (Kotler & Keller, 2006). The consumer behaviour towards apparel and accessories seems to be dynamic, in the sense that it changes with time. Thus, it becomes imperative to study the changing behaviour of consumers.

Consumer behaviour is a process and purchase is one of the stages in that process. The buying decision is a long process, which involves mental and physical activities and it may involve

more than one individual. Consumer purchase behaviour primarily is an influenced behaviour, that is, it generally involves factors that influence the purchase or denial of merchandise.

With increase in awareness amongst consumers to recycle products and reduce wastage, there was an urgent need for an appropriate platform to allow selling and buying of pre-owned goods that are still in good condition. Thus, the pre-owned/second-hand fashion has emerged as a growing trend over the last ten years in Western culture. Majority of middle- and lower-income group have found a cost-effective way to meet their demands in growing pre-owned market which may touch Rs 1.15 crore from the current estimated level of about Rs. 80,000 crores as reported by a study by the Associated Chambers of Commerce of India (ASSOCHAM). Various categories of pre-owned goods that are being demanded by consumers include books, mobile, computer, luxury items, apparel etc. (www.timesofindia.indiatimes.com). There are several online portals that are operating on reverse commerce or re-commerce model, which is defined as online market place to buy or sell old goods. For example, confidentialcouture.com, eBay.in, etashee.com, olx.com, etc. Similarly, another way of consuming pre-owned clothing is to hire/rent. There are several retail outlets, both, online and brick-mortar set up that offer especially, ethnic creations from well-known designers on rent.

While consumer behaviour has been studied extensively, the pre-owned clothing market is not yet well explored. Pre-owned apparel shopping encompasses sustainability, human geography and retail geography. Currently, consumer may also be influenced by a new wave of eco-consciousness in their purchase decision making. There are re-commerce avenues not only for womens' wear but also for mens' wear.

Pre-owned clothing market in India holds a huge potential with consumers taking active interest in going green and recycling and initiative being taken up by retailers to offer pre-owned merchandise to consumers. The purpose of this study was to understand the consumer behaviour of men and women of different age groups towards pre-owned clothing purchase and consumption.

OBJECTIVES OF THE STUDY

- To study the factors influencing consumers' acceptance and willingness regarding the purchase and/or rent of pre-owned clothing.
- To study the retail outlets selling and/or renting out pre-owned clothing.

MATERIALS AND METHODS

Sample Selection

The criteria considered for sample selection was age and gender. As the study was aimed at Delhi region, the respondents were selected from the different regions. Further it was felt that different age group and gender may exhibit different buying behavior due to difference in their lifestyle, choices, income and expenditure pattern, the sample was therefore, suitably divided on the basis of age and gender. Purposive sampling technique was deployed and respondents were chosen randomly from various locations of Delhi region who buy pre-owned clothing. Special care was taken to arrive at the most representative sample by careful selection of respondents from different locations, from varied professions and of pre decided age groups and of both gender.

Sample size

For the study, the sample constituted of 100 men and 100 women, from various age groups, residing in various regions of Delhi. The details are shown in Table 1. Thus, the total sample size of 200 was taken for the study.

Table 1: Details of Sample

Sample	Age Group(years)	Sample Size	Total
Men	18-28	50	100 Men
	29-45	50	
Women	18-25	50	100 Women
	29-45	50	

To study the retail outlet, a sample of retailers who sell or rent pre-owned clothing, from different zones of Delhi, were selected.

Data Collection

The data and literature pertaining to consumer behaviour was gathered from various published and unpublished works such as magazines, books, and news clippings and primarily from a first-hand study of relevant websites.

Questionnaire

A questionnaire was administered on the urban individuals of Delhi region, which comprised of close-ended and open-ended questions ranging from general to specific about the consumer behavior towards pre-owned clothing. The questionnaires were administered personally as well as sent online. It consisted of questions relating to:

- Respondent’s basic information like name, age, gender etc.
- Whether the respondent is an pre-owned clothing shopper or not
- Range of products that respondent bought
- Problems faced by them on purchase of pre-owned clothing
- Respondent’s level of satisfaction on purchase of pre-owned clothing

Interview

A detailed interview was conducted to gather information on selected pre-owned clothing retailers in Delhi.

FINDINGS AND DISCUSSION

The present study was conducted to understand the consumer behavior towards purchase and consumption of pre-owned clothing, as this information will prove beneficial in clearing any road

block and help in furthering the growth of pre-owned clothing industry and to avoid stagnation. To further understand the pre-owned clothing industry, various retailers offering these shopping avenues were also assessed. The findings of the study are discussed as follows:

Factors influencing consumer acceptance and willingness towards pre-owned clothing

When a customer decides to buy a product, his/her buying behaviour is influenced by two important factors: (a) Individual factors (e.g. demographics, customer's perception, convenient to wear, knowledge, inspiration, learning, suiting the personality, attitude, thoughts and lifestyles) and (b) Environmental factors (e.g. culture, the reference group, social class, family and household). Additionally there can be some other factors (e.g. price, quality, location and personal style) that a customer may consider while buying a product. Additionally, the consideration factors are also different, based on the product category and customer personality.

Hence, as the study focused on the pre-owned clothing acceptance and willingness to purchase, it was important to study the factors that influence the customer's decision while buying pre-owned clothing. The factors affecting consumers' acceptance and willingness towards pre-owned clothing were identified as price, access to luxury brands at less price, good quality, convenient to wear and ecological awareness, which were studied and the responses are shown in Figure 1.

Product price is always the most important factor for customer while purchasing any product. Similar trend was also observed, in case of purchase of pre-owned clothing. Majority of consumers in both the genders were motivated to buy pre-owned clothing because of its value for money as indicated in Figure 1. Ease of purchase and access to luxury brands that are also available at lesser cost were also significant factors followed by good quality, compatible with personal style, ease of purchase, convenience to wear and ecological considerations were the main reasons for both men and women.

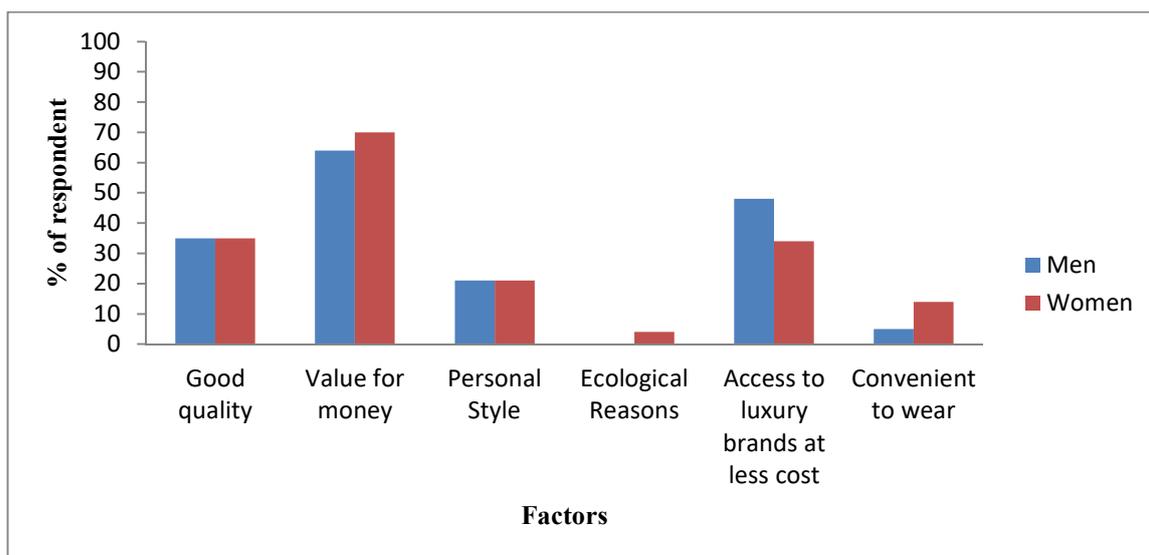


Fig 1: Factors Influencing Consumer's Acceptance and Willingness towards Pre-owned Clothing

The results indicate that the main reason for buying and hiring of pre-owned clothing were price/value for money and ease of purchase, especially among women, discussed briefly as follows:

(a) Price

The selling price may get significantly reduced as much as upto half or even less, than the original price when an owner values the product as a pre-owned item. However, very reasonable price is charged as rent in relation to the original price of the product, when a product is hired, for a short duration.

(b) Ease of purchase

Ease of purchase is also a significant factor. Accessibility to the desired product through stores is an important component in ease of purchase.

Pre-owned clothing is primarily available for purchase from, online and brick mortar stores (offline). Figure 2 shows the preference of ease of purchase by consumer (men and women).The results indicate that most of the respondents preferred to buy pre-owned clothing from offline stores (brick mortar) because this allowed them to check the condition of the clothing item, its visual appearance, quality, fit and comfort, which were very important to the buyer. Thus the offline stores had this advantage in comparison to an online store. Besides, online and offline options, it was found out that there were some other significant options also available, which included approaching a friend or relative or sometimes even a flea market. Very few respondents showed preference for buying pre-owned clothing online (less than 20%), because of the fear of online transaction or giving personal details, also the lack of touch and feel factor.



Fig 2: Distribution of men and women respondents for the most preferred option of buying and renting of pre-owned clothing

An attempt was made to compare the consumer buying behaviour of pre-owned clothing, of men and women, in terms of the preference of mode of purchase i.e. buying or hiring. The results are shown in the Figure 3 and discussed as follows:



Fig 3: Gender wise distributions of respondents according to their preference to buy/rent

Figure 3, shows that 81% of male respondents and 59% of female respondents prefer buying of pre-owned clothing rather than taking on rent. This could be due to several advantages and disadvantages of buying or hiring, as shown in Table 2 and Table 3, respectively.

Table 2: Advantages and disadvantages of hiring pre-owned products on rent

Advantages: Hiring	Disadvantages: Hiring
<ul style="list-style-type: none"> • Saves money, time and space in wardrobes • Renting clothes encourages a circular economy • It allows customers to wear new outfit at different occasions 	<ul style="list-style-type: none"> • Hygiene issues • Security fee/ advance is more • Psychological resistance, cultural and social restrictions • Inhibitions related to the quality of the product

Table 3: Advantages and disadvantages of buying pre-owned products

Advantages: Buying	Disadvantages: Buying
<ul style="list-style-type: none"> • No fear of repetition by others • Become a pride posers on, in case of luxury • Save environment • Cheap price • Unique varieties 	<ul style="list-style-type: none"> • Sizing issues • Sometimes not worth of cost • Authenticity of brand • Cheap quality product • Hygiene issues

Retail outlet study

As a part of the study various retail outlets offering pre-owned clothing were studied. With the increase in awareness among consumers to reduce, reuse, and recycle garments, the need for an appropriate platform to sell and buy fashionable clothes in good condition became necessary. This is when re-commerce and re-fashioning was born. Re-commerce or reverse commerce is the

recovery of products through internet or physical stores. In this section of the study, retailing of pre-owned clothing, in terms of outlets, product mix, quality assurance, price and product sourcing are discussed.

(a) Retail outlets

As expected, pre-owned clothing and other products were being bought/sold through online and offline channels. Additionally, it was interesting to observe that retailing of pre-owned products also occurs in flea market in Delhi such as Chawla wedding collection, Rent a closet, Alpana fancy dresses etc. It was also observed that some stores exclusively deal with pre-owned products only, through both offline and online channels. Only a few websites deal with re-commerce, a very popular site like Myntra, which is a retail giant very recently started re-commerce activities via collection of the old clothes and recycled them through charity. A comparison has been drawn between various channels of the retails, as per the findings of the study, shown in Table 4.

As re-commerce is booming, it was interesting to observe that with the success of an online setup, retailers were also venturing into offline store. Mr. Ravi from Fly robe informed that the “touch and feel factor” was the main reason for launching his brick and mortar store in Lajpat Nagar, after the success in online selling.

Table 4: Comparative study of retail outlets dealing in pre-owned clothing

Channels of Retail Outlets		
Online	Offline	Flea market
<ul style="list-style-type: none"> • Product mix: Casual wear, Designer wear, Ethnic wear, Luxury brand wear etc. • Mainly rent and sell • More number of products available • No touch and feel factor • Mainly preferred by younger generation, (18-28 years) 	<ul style="list-style-type: none"> • Product mix: Casual wear, Designer wear, Ethnic wear, Luxury brand wear etc. • Mainly rent and sell • Limited to such products • Buyer can touch and feel the product • Preferred by both the generations, (18-28 years and 29-45 years) 	<ul style="list-style-type: none"> • Product mix: Casual wear, Ethnic wear • Only sell, no rent • Limited to such products • Buyer can touch and feel the product • Preferred by both the generations, (18-28 years and 29-45 years)

(b) Product mix

It was observed that most of the stores offered clothing as well as accessories.

- Clothing: Most of the outlets offered products for both men and women. Pre-owned stores mainly offered casual wear, ethnic wear, designer wear, luxury brand wear etc. in different size ranges. Some of the pre-owned retail outlets mainly offered their clothing for special occasions only.
- Accessories: Pre-owned stores mainly offered bags, shoes, jewellery, watches etc.

(c) Quality assurance

Quality assurance was the key requirement in re-commerce. Most of the outlets ensured their quality of product in such manner that it was well accepted by the customers. As per the interview data, following quality check points were kept in mind:

- No un-desired stain
- No open seam, jump seams or other stitching defects
- No un-desired puckering in the seam lines
- All trims and fasteners should be secure and attached at the right place
- No pilling

When the product meets all the quality checking processes, they are sent for dry cleaning and ironing.

The typical sequence before placing an item for repurchase or rental was as follows. The articles were first put through full quality check, then dry cleaned and ironed to present them in a saleable condition.

(d) Price

Price is one of the main drivers behind product purchase and also the main factor which helps the vendor/brand to increase its market share. In re-commerce, product can be sold or can be given out on rent. Accordingly, retail price or rent charges were decided. As reported earlier some categories like casual wear were mostly purchased whereas designer wear was mostly hired on rent.

In most of the outlets, retailers decided the price of the garment according to the following criteria:

- Popularity of the brand
- Product type (Luxury wear, designer wear etc.)
- Surface ornamentation
- Occasion

(e) Product sourcing

Retailers mainly source their articles from wholesale market like Chandni Chowk, Sadar Bazaar and others such wholesale markets. Designer boutiques were another sourcing destination for pre-owned products. Sometimes albeit rarely, the retailers got their articles stitched by tailor as per buyer demand.

CONCLUSION

From the study, it can be surmised that fashion re-commerce is likely to grab major share of the market in coming times, as the consumers want to have the latest in their wardrobes at a reasonable price and in eco conscious manner. There has been an upsurge in pre-owned shopping in recent years, particularly in the field of fashion. As today's consumers believe in high-mass consumption, it affects the environment negatively. Second-hand clothing/ pre-owned clothing has been identified as the most feasible method to change consumer's consumption patterns as it helps to promote sustainability, which leads to greener future. Fashion re-commerce offers several advantages, but due to several reasons such as inhibitions regarding product quality or wearing pre-owned clothing due to psychological resistance, cultural and social restrictions and hygiene issues, it has not achieved its full potential.

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EXPLORING THE PROCESS OF COMMUNITISATION: GROUNDING REALITIES OF COMMUNITY PARTICIPATION IN UTTARAKHAND AND RAJASTHAN

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ABSTRACT

12 years ago since the introduction of Village Health Sanitation and Nutrition Committees (VHSNCs) under NRHM, very few research studies have been carried out to examine the role and functioning of VHSNCs and their impact on seeking and provisioning of health care services. This paper focusses on the methods & processes employed by the VHSNCs to form and function. Two states in North and Western region of the country that is Uttarakhand and Rajasthan were selected. Both the states have been listed as special focus state under NRHM. Existing health and development indicators point towards differentials in the social determinants and robustness of PRIs, in these states. Therefore, these aspects were considered for analysis of the functioning of VHSNCs. To understand the role of State and NGO as a facilitating agency, theme guide was developed for conducting FGDs with all committee members. Semi – structured interviews were conducted with various stakeholders like committee members, health professionals and NGO functionaries. Checklist was adapted from NRHM guidelines to assess the functioning of the VHSNCs. Atlas Ti was used to draw out themes across different stakeholders, & the emerging inductive themes were analyzed in detail. Communitisation as a process of community organization rests on foundation stones of ownership and participation. However the reality appeared to be very different. Only few members took responsibility and in some villages committees existed only on papers. The study reveals better performance by those VHSNCs which received training vis-à-vis the untrained ones. Absence of support system, lack of monitoring and low motivation did not let them realize their true potential.. The findings indicate that VHSNCs are still figuring out their role and identifying their capacities. Being a new concept, extensive training and constant guidance is need of the hour to make them more effective as an engine of Community health.

Keywords: Communitisation, Health systems, VHSNCs, Gender, Governance

INTRODUCTION

Vast disparity in social, geographical and economic determinants, India's health status has always been a foreseen challenge before the government. To reach out to its large population, especially to those living in rural areas and provide them with quality health care services has always marked a room in annual budget year after year. The NHP 2013 revealed that in our country only 33 per cent of Government doctors were available in the rural areas where nearly 70 per cent of our population lives.

In order to find a solution and reduce the burden of poor health status, a community empowerment approach was envisaged in National Rural Health Mission (NRHM). The mission

document of India's NRHM (2005–2012) clearly spelled out the importance of community participation as part of the decentralized process of health care management. It is believed that with recognition of 'Right to Health', proper orientation and training local bodies to not only motivate community members but also the health providers for quality care and treatment the situation can change.

A much more recent concept formed on the lines of community participation is Communitisation. For the first time communitisation was introduced in Nagaland Communitisation of Public Institutions and Services Act, 2002. Communitisation has evolved out of a quest to improve public delivery systems. It refers to a unique partnership between government and the community; where in the best of both the systems come in partnership with each other and have defined roles. In this system, ownership of public resources and assets is handed over to the community. The community is granted powers to manage and maintain institutions and control service delivery with the aim of improving the delivery of public utility systems. On the other hand, state government performs the role of a supervisor. It is expected to monitor and assist the whole process.

Village Health Sanitation and Nutrition Committees (VHSNCs) envisaged under NRHM, now called National Health Mission (NHM) were envisaged on the principle of communitisation. The committees are expected to take collective action on issues related to health and its social determinants at the village level and create a sense of demand for quality health care among the population, especially rural which has been devoid of it since many years.

OBJECTIVES

General objective of the study was to explore the process of Communitisation by examining the functioning of Village Health Sanitation and Nutrition Committees (VHSNCs) and their impact on seeking and provisioning of health care services by the community. This paper focusses on the methods and processes employed by the VHSNCs to form, function and fulfil the set objectives under NRHM and understand the role of NGO as a facilitating agency in VHSNCs.

ASSUMPTION

It is assumed for the study is that VHSNCs are working at the village level to improve the health status and health seeking behavior of the community. They are able to bridge a gap between community people and health care services by making them more accessible and available for the public.

METHODOLOGY

Under NHM, revenue villages are entitled to form a VHSNCs which is one of the key elements of the programme. Uttarakhand and Rajasthan were selected. These two states have been selected considering the vast difference in their geographical localities and social determinants like gender differentials, socio – cultural practices, income and robustness of PRIs affecting the functioning of VHSNCs. Secondly, both the states have been listed as special focus state under

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NRHM out of a total of 18 states. These states either have weak public health indicators and/or weak health infrastructure.

The study was conducted from October 2013– March 2016. One of the main objectives of the study was to understand the difference in functioning of VHSNCs with and without NGO intervention if any. Districts were selected on the basis of existence of a NGO that had intervened in the area of VHSNCs. Two blocks from each of the two districts were selected, one with NGO intervention and other with no NGO intervention to maintain exclusivity. Three villages were purposely selected under each block. In total, 12 villages were selected.

To examine the methods and processes employed by the VHSNCs to form, function and fulfil their objectives, theme guide was developed to conduct focus group discussion with all committee members. Semi – structured interview schedules were developed for various stakeholders like committee members, health professionals and NGO functionaries. Along with these tools, checklist adapted from guidelines for community processes, NRHM 2013 was included to assess the functioning of the committees. Records and documents maintained with VHSNCs were also seen.

To understand the role, functioning and participation of VHSNCs, interactions with all the members of 12 selected committees were done. The interactions included meeting VHSNC members individually and in group and NGO facilitators. Non probability, purposive sampling technique was used for the purpose of selecting the VHSNC members for in depth interviews. In total 32 FGDs and 75 IDIs were conducted across two states. In Nanital district of Uttarakhand data was collected from Ramgarh block (with NGO intervention) and Bhetalghat block (without NGO intervention) and in Alwar district of Rajasthan from Lacchmagarh block (with NGO intervention) and Kathumar block (without NGO intervention). Atlas Ti was used to draw out themes across different stakeholders, and the emerging inductive themes were analyzed in detail.

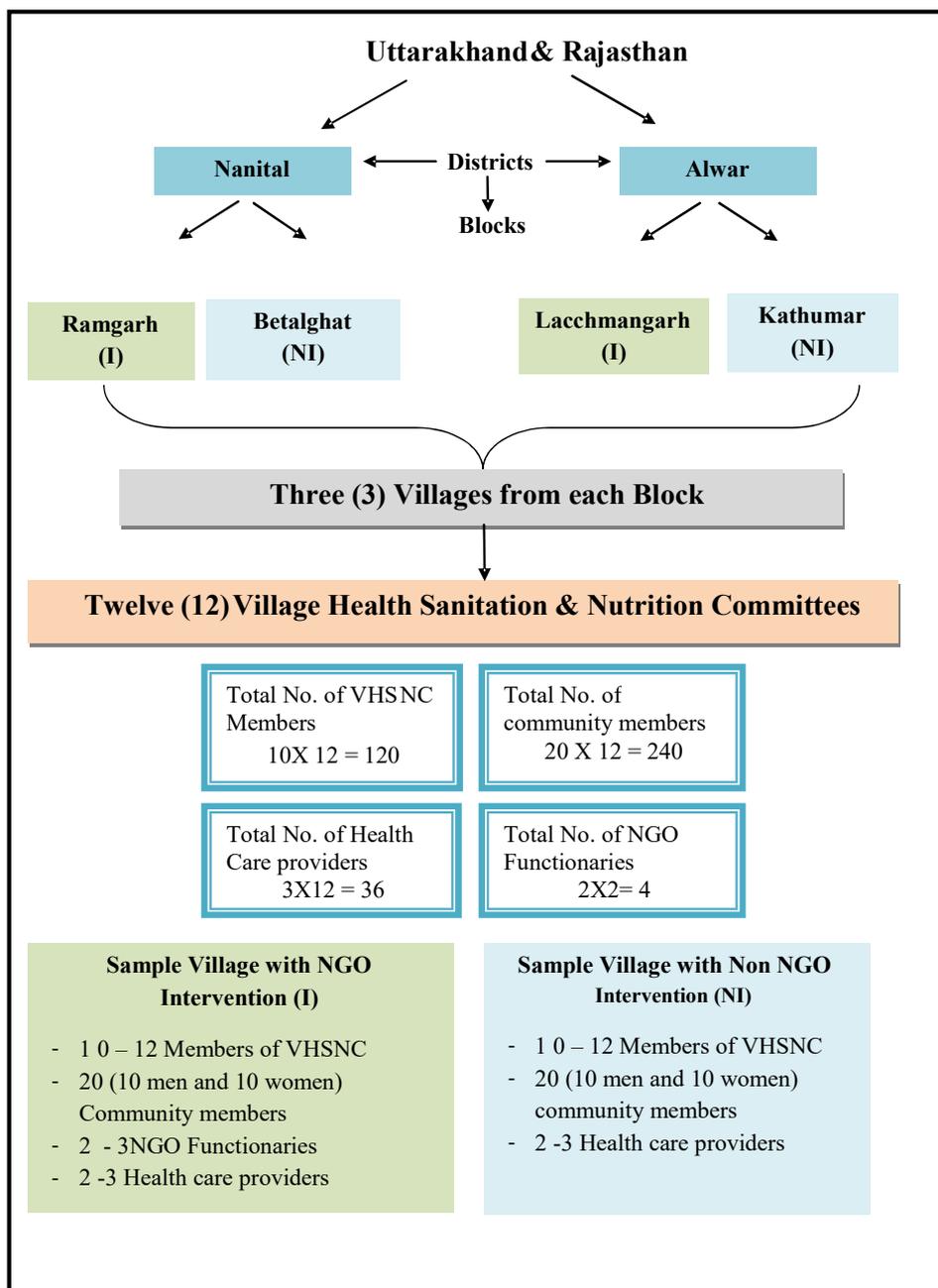
FINDINGS AND DISCUSSION

Village Health Sanitation and Nutrition Committees (VHSNCs)

One of the key elements of the National Rural Health Mission is the Village Health Sanitation and Nutrition Committee (VHSNC). VHSNC is aimed to support the process of decentralization at a local level under NRHM. VHSNCs are expected to provide a leadership platform for improving awareness and access of community for health services. The committee is also expected to support the Accredited Social Health Activist (ASHA), develop village health plans specific to the local needs, and serve as a mechanism to promote community action for health, in particular to social determinants of health. Alongside they are expected to monitor and facilitate access to essential public health services, organize health promotion activities, identify health problems and strategize plans to improve health condition, manage untied village health fund and maintain proper records.

The VHSNCs are to be formed at the level of revenue village comprising a minimum of about 15 members including key stakeholders, Panchayat (village level governance body) representative, frontline health workers, school teachers, community health volunteers,

representative from Self Help Groups, Non-Government Organization etc. The chairperson of the committee should be preferably a woman elected member of panchayat who is a resident of the village. ASHA is the Convener for the Committee. At least 50% members should be women. Each hamlet should be well represented. Every VHSNC should have a bank account jointly opened in the name of chairperson and ASHA (secretary), to which the un-tied fund of Rs.10, 000 shall be credited.



(I) – NGO Intervention & (NI) – Non NGO Intervention

Figure 1: Detailed Sampling Plan

Composition of a VHSNC:

- The Chairperson should be a woman (panch) preferably from among the SC/ST communities
- The ASHA will be the Member-Secretary and Convener
- About 50% should be women members and SC/ST sections should be well represented.

Bank Account of VHSNC:

- The Chairperson of the VHSNC and the Member Secretary ASHA should be the joint signatories of the VHSNC account.
- Untied fund of Rs.10,000 shall be credited to this account

Village Health Sanitation & Nutrition Committee (VHSNC):

Main objective is to take collective action on issues related to health and its social determinants at the village level.

Activities and Outcomes of VHSNCs:

- Village Health Planning
- Monthly meetings
- Organizing local collective action for health promotion

Activities and Outcomes of VHSNCs:

- Community monitoring of health facilities
- Facilitating service delivery and service providers in the village

Figure 2: Overview of Village Health Sanitation & Nutrition Committees

Formation, Renewal & Composition of VHSNCs with NGO intervention

With NGO intervention it was observed that NRHM guidelines were followed and committees were renewed on time. As suggested in the guidelines that Chairperson of VHSNC should be a woman elected member of the Village Council (Gram Panchayat) from Schedule Caste/ Schedule Tribe (SC/ST) community (preferably) and in case of no woman candidate, preference should be given to any Panch from SC/SCT. This guideline was followed by all the villages with NGO support.

It was observed that in six NGO villages where the NGO intervened in both the states the committees were broadly formed as per the guidelines issued in 2013 by the NRHM. All the committees comprised of 15 members on an average, with 50% women members and other caste were also well represented. In all the six committees the position of member - secretary and that of the convenor was occupied by ASHA in line with the guidelines. Other frontline workers like, Auxillary Nurse Midwife (ANM), Anganwadi worker (AWW) and Anganwadi helper (AWH) were a part of committee. Community members were also found to be members in VHSNC in both the states.

Formation, Renewal & Composition of VHSNCs without NGO intervention

In both the blocks under study it was noticed that in villages with no NGO intervention the committees were not formed in accordance with the revised guidelines (NRHM, 2013). Many norms related to composition of the committee like, SC/ST women chairperson, minimum number of 15 members were not met by all the committees. As it was observed that members were not sure if they were a part of the committee or not, list of composition of VHSNC was not clear. Hence there was a clear distinction between VHSNCs with and without NGO intervention in terms of basic formation and composition of committees. Similar results were pointed out by Singh and Purohit (2012), in a study conducted on limitations in functioning of VHSNCs in Gujarat. They found that VHSNs did not meet the NRHM guidelines and the level of awareness related to activities and processes of VHSNCs was low among the committee members.

NGOs played an essential role in functioning of the committees. This fact got established more, when non NGO VHSNCs were analysed. Lack of knowledge among committee members and no training, no exposure about VHSNCs led to such a state of dismal functioning. There were no efforts by the health department to inform people about VHSNCs, not even ASHAs were aware of its functioning.

Functioning of VHSNCs with NGO intervention

As per guidelines, VHSNC members should meet to discuss and review, work done, plan future activities and decide on utilization of untied funds. Monthly meetings should be held at least once every month on a fixed day, for example second Saturday or third Thursday of every month. A convenient venue should be chosen and ASHA should remind the members of the meeting and mobilise them to attend it. A register to record minutes of the meetings and an attendance register should be maintained to facilitate proper functioning.

Table 1: Composition of the VHSNCs with respect to NHM guidelines

Indicators	Ramgarh Block (Nanital, Uttarakhand)			Lacchmangarh Block (Alwar, Rajasthan)		
	<i>Simayal</i>	<i>Gargaon</i>	<i>Chapar</i>	<i>Sorai</i>	<i>Moliya</i>	<i>Jauna Khedha Pahaad</i>
Composition of the Village Health & Sanitation Committee						
Elected Gram Panchayat Member as Chairperson (SC Woman/Man)		Woman (General caste)				
ASHA						
Frontline staff of government health related services: ANM, Anganwadi worker, school teacher						
Volunteers or village level workers of other government departments- e.g. Hand pump mechanic of Public Health and Engineering Department (PHED) or the field coordinators of the MNREGA programme						
Community Based Organizations: Representatives from, SHG, Forest Management Committees, Youth Committees, etc.						
Pre-Existing Committees						
Service- Users						
Non- residents of the village. Including Medical Officer of the local PHC, Facilitator of the ASHA Programme, Supervisors in health and ICDS departments, Panchayat secretary and Block Development Officer, District and block panchayat member.						
50% of total members are women, SC, ST & Minorities well represented as per their population in village.						

In blocks with NGO intervention in both the states meetings were conducted once a month on a regular basis. A date was fixed in all six VHSNC visited. In case of change of venue the members were informed on prior basis. Mostly meetings took place at ASHA's house / Panchayat

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Ghar / Temple / AWC or any other central point. Minutes of meetings were mostly taken by ASHA or NGO representative. On an average 10 - 12 members attended the meetings.

VHSNCs in Ramgarh block (Nanital, Uttarakhand) emerged to be more active than committees in Lacchmangarh block (Alwar, Rajasthan). The regularity in conducting meetings, presence and participation of members, maintenance of records, making of annual health plan, regular awareness drives and other health and sanitation related activities in respective villages made them more active. It clearly depicted that most of the requirements under heads like, composition of VHSNCs, village health fund and maintenance of bank account, accountability, activities and outcomes of the VHSNC were fulfilled by the committees existing in Ramgarh block (Nanital, Uttarakhand).

As a non – participant observer, researcher attended one VHSNC meeting in each block. VHSNC meeting in Simayal village of Ramgarh block (Nanital, Uttarakhand) were attended in order to closely observe the functioning of VHSNCs.



Picture 1: VHSNC Meeting in Simayal village, Ramgarh Block, Nanital

members one by one. Some of the issues revolved around reducing the incidence of Jaundice, diarrhea, anemia, strategies to increase birth and death registration. Panch(s) and Chairperson of the committee were least participative. As SHG meeting was scheduled after VHSNC meeting, this ensured active participation of SHG women as well. Meeting lasted for almost an hour. Minutes were read before the group members. All the members signed in the register and the meeting was dispersed.

In Simayal village of Ramgarh block (Nanital, Uttarakhand), out of 13 members who were listed in the committee, 7 were present for the meeting which took place at ASHA's residence. Meeting began on time, NGO functionary discussed last month's minutes of the meeting.

Committee members were questioned on the work done in the previous month. NGO functionary and Pradhan, who was a woman, initiated most of the discussion. Pradhan noted the

minutes simultaneously. All the points mentioned in Annual health plan (Vishay Karya Yojana) were discussed among the

Plate 1 VHSNC Meeting at Nainital

Functioning of VHSNCs without NGO intervention

Das et al. (2016), conducted an assessment on functioning of VHSNCs in rural areas of Assam. They stated similar results; only 16.67% of VHSNCs conducted 10 – 12 meeting in a year. The participation of members was weak as only in 33.34% of VHSNCs more than seven members

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attended the meetings though in more than 50% of the committees there were more than 11 members as per its constitution. Similar results were stated in a report compiled by Regional Resource Center for North – Eastern States (2011), in an assessment of VHSCs in three states Manipur, Meghalaya and Tripura. In all three states monthly meetings were found to be irregular. Overall, the villages where the NGO intervention was missing, there was dearth of information among the members. There was no uniformity in selection of members, composition of VHSNCs, and close to nil performance.

Members were not serious as far as VHSNCs were concerned. In Betalghat block (Nanital, Uttarakhand) the concept of committee was totally missing it was the Pradhan who took all the decisions. VHSNCs only existed on papers, no concept of group meetings, decision making and this totally defeated the purpose of communitisation. They were like any other group in which predominantly the head of the group would decide on everyone's behalf. Similar was the situation in Kathumar block (Alwar, Rajasthan) all there was no sense of commitment towards VHSNC meetings or work. Lack of monitoring mechanisms made the systems weak at the grassroots. Unfortunately members had no clue about the power and resourcefulness of VHSNCs and hence they were not considered as a priority by any member.

VHSNCs were only able to manage untied funds and maintain records to some extent without NGO intervention. Rest of the activities such as conducting monthly meetings, organizing health promotion activities and monitoring of services were not performed by them. In such areas NGOs can play a very important role. VHSNCs were envisaged to bridge gap between service providers and utilizers, by processes such as community monitoring, questioning the system, raising voices VHSNCs can improve the essential health and related services. Being a new concept, a guiding force can help VHSNCs understand and deliver in a much better way.

In village Ramgarh of Kathumar Block (Alwar, Rajasthan), the official day was decided on second Wednesday of each month. 4 – 5 members used to assemble in AWC discuss about cleanliness and seasonal diseases and conclude the meeting in 15 – 20 minutes. *'Meeting mein bula lete hain aur baith kar khamapurti karte hai...Hum ghar – bhar ki baat karke chale jaate hain'* (ASHA calls us for the meeting, to fulfill formality. We talk about our lives and go back) – IDI, Community member, Ramgarh. It emerged that meetings were organized only for formality. Even ASHA mentioned, *'Haktakshar kar wane ke liye peeche panda padta hai...rishwat ke taur par chai – nashta dena padta hai tabhi sign karte hain nahi tow mana kar dete hain'* (For their signatures I have to invite them and give them tea and snacks then members sign in the register)

Table 2: Mapping Activities carried out by VHSNC with NGO intervention

Indicators	Ramgarh block (Nanital, Uttarakhand)			Lacchmangarh block (Alwar, Rajasthan)		
	<i>Simayal</i>	<i>Gargaon</i>	<i>Chapar</i>	<i>Sorai</i>	<i>Moliya</i>	<i>Jauna K Pahaad</i>
Activities carried out by VHSNC						
Monitoring and Facilitating Access to Essential Public Services: (Health Services, MNREGA Rations from Public distribution system, Mid Day Meals AWC Services Access to Clean Toilet Safe Drinking Water)						
Organised local collective action for health promotion.						
Facilitated service delivery and service providers in the village						
Committee made a village health plan						
Performed community monitoring of health care facilities						
Conducted monthly meetings						
Managed Untied Village HealthFund						
Maintained accounting for the Untied Village Fund						
Maintained records (Record of Meetings – with attendance signatures., record of approvals. given by members for expenditure/withdrawal, cash book, public services monitoring register, birth register, death register)						
Have been exposed to Capacity Building and Training Strategy						

Work done by VHSNCs with NGO intervention

Though work was carried out in both the blocks by VHSNCs however, in Ramgarh block (Nanital, Uttarakhand) more number of activities were initiated. One reason behind this was that VHSNCs in Ramgarh block received untied funds on time initially hence they could plan and spend money accordingly and secondly NGO’s support guided them at every step and gave them

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confidence to take decisions. It was because of NGO's training and presence of NGO functionary in each meeting which made a difference in VHSNCs outlook. After 2012-13 committees had not received untied funds but this did not stop them from taking actions. By this time VHSNCs were well versed of their potential thus performed tasks which required no or less funds like information dissemination etc. Regional Resource Center for North Eastern States carried out an assessment of VHSCs in Manipur, Meghalaya and Tripura in 2011, some of the major activities conducted included, construction of urinal, repairing of well, purchase of weighing machine, organized awareness campaign, cleanliness drives, gave loan to poor families and designed hoardings and sign boards with health messages. With increased participation and more clarity among committee members, untied funds can be spent across many areas.

Scenario was very different in Lacchmangarh block (Alwar, Rajasthan). Though VHSNCs had managed to improve health delivery system and other related issues but this change happened much later. Only VHSNC of Moliya was one of the most active committee in Lacchmangarh block out of the three VHSNCs visited. VHSNCs there did not make any health plans, had not received funds up till mid 2016, proper functioning of VHSNCs began in 2014 after intervention by the NGO and before that no work had been carried out by VHSNCs.

On the basis of findings it can be said that, unless funds are credited on a regular basis and committees do receive proper orientation about how to utilize funds resourcefully, in what areas can be spent, how to maintain records, it will be difficult for VHSNCs to unleash their potential to the fullest. The concept of handing over in the hands of the community can't lay its fruits unless community is empowered with knowledge and resources as seen in Ramgarh block (Nanital, Uttarakhand). VHSNCs work like community based organizations (CBO), which provides a platform for community to voice their concerns, discuss and find viable solutions; however it is responsibility of the state to provide them with necessary guidance and resources to perform as expected.

Work done by VHSNCs without NGO intervention

No records related to VHSNCs like minutes of the meetings, expenditure of untied funds were shown to the researcher in both the blocks, except for Seem village in Betalghat block (Nanital, Uttarakhand). As observed no records or copy of records were maintained by ASHA or Pradhan. Interviews with other members revealed that no exercise of maintaining records was carried out. This reflected the fact the VHSNCs were not taken seriously in these villages. Non-functioning of VHSNCs led to manipulations such as writing minutes of the meetings without conducting meetings, taking signatures of members who did not attend meetings, up keep of records of expenditures all such gestures hampered the trust of community members for a long time to come. Non seriousness, lack of commitment did not help in bridging the gap between service providers and users in a way it increased the gap.

a. Made Annual Health Plan, VHSNC Chapar, Ramgarh Block, Naital



b. Built Pucca Kudhadaan Peeth (Permanent garbage bins), Ramgarh, Naital



c. Regular cleaning of Naula (Manmade spring water structure), Ramgarh Block, Naital



d. Purchased Palanquin (Doli) of Gargaon Village Ramgarh Block, Naital

Plate 2: Work done in Ramgarh Block, Naital

Synergy between VHSNCs with NGO intervention and Health care service providers

To understand the synergy between VHSNC and other public health care service providers at the village level, health functionaries beyond peripheral level were interviewed.

All of them agreed to the fact that interaction between VHSNC members and other health functionaries should be increased for improvement in health status. Lack of information about VHSNC among other health care workers limited the processes of communitisation. No involvement with VHSNC limited the health care professionals to recognize true potential and powers of the committee. A lot of health promotional activities, organizing health camps in villages, information dissemination on sanitation and health related issues all went untapped. If other health care providers work with VHSNCs a change could have been many folds then what it is achieved now. The Guidelines mentions some areas where VHSNCs can work with other health system like in the area of community monitoring in primary and secondary health care services. The VHSNC could also offer to help; they can serve the role of a forum for grievance redressal on the community level issues related to health, sanitation and nutrition. Ideally it should dialogue with the service providers in case of any complaints regarding the services and also proactively

monitor the access of services and schemes to the marginalised sections of the village and look into any malpractices.

Synergy between VHSNCs without NGO intervention and Health care service providers

In both the blocks under study, no synergy was observed between VHSNCs and health care service providers. Both the ends lacked information and were unable to identify the potential of communitisation process. Even if health care professionals are not a formal part of the committee, VHSNCs could invite them for meetings. As per the guidelines special invitees are welcome to attend and indeed their presence and interaction with the committee is essential. They are generally not residents of the village like Medical Officer of the local PHC, facilitator of the ASHA Programme, supervisors in health and ICDS departments, Panchayat secretary and Block Development Officer, Zilla and block panchayat member. Ideally the medical officer and block development officer should participate in VHSNC meeting at least once or twice in a year. This synergy would not only help the committees to build a better understanding of the system, identify challenges and strengths but also help them plan committees activities in a much more comprehensive manner.

SUMMARY, CONCLUSION AND IMPLICATION

The study clearly revealed that the composition, functioning and dynamics of each VHSNC differed and varied from each other. However, there were some gaps which were common and served as obstacles in letting VHSNCs reach their full potential.

Communitisation, as a process rests on foundation stones of ownership and participation. However in reality, it was found to be missing for VHSNCs. Only few members took responsibility and in some villages even that was missing as committees were only established on papers.

Committee members lacked enthusiasm; this factor was guided by lack of orientation and training given to VHSNCs. The study reveals better performance of VHSNCs that received training vis-à-vis the untrained ones. Absence of support system, lack of monitoring and low motivation did not let VHSNCs to sprout to the fullest.

According to the study, VHSNCs are connected to three components, which affect their existence and can deeply impact their functioning, if explored further, at the grassroots level. Social Determinants, Local Governance and Existing Health Systems are three crucial dimensions to VHSNCs. Health committees have a lot of potential which at present goes unrecognized; it is believed if local government, primary level health systems and community members join hands and work together in VHSNCs, there will be no limits in the process of development.

Social determinants as a variable have many sub sections ranging from micro to macro level. As per VHSNC design, if committee involves people from all the sections of the society, from all the castes, give women and men equal right to voice their opinions, support and encourage the chairperson (SC – ward member), it will lead to a sense of ownership among the community at large. Community members will feel connected. VHSNCs can become a platform where people will feel free to demand their rights and act as a collective, leading to community empowerment.

Secondly, support from local government bodies like PRIs and other government / non-government departments (forest, education, water, youth, SHG etc) can have an impact on functioning of VHSNCs.

Irrespective of government efforts to reach the last mile over the years to ensure quality of health to all; there are lacunae in the existing public health system. On the other hand, presence of ASHA, regular round of immunization, and medical assistance in CHC and district hospital made were some of the positive and only options available to people.

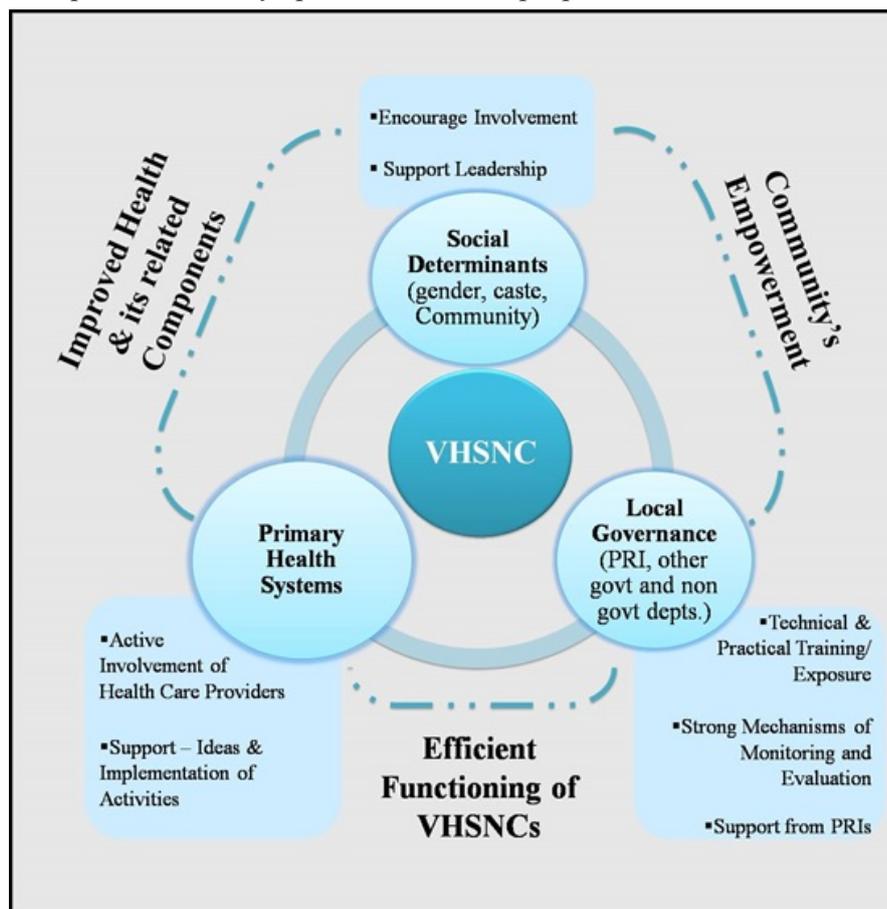


Figure 3: How VHSNCs can be an instrument of Communitisation of health and achieve desired outcomes

VHSNCs, as a body, have a lot of scope to improve basic health conditions of the community. With right kind of training and support (financial and technical), they can transmute the village in their capacity. They serve multiple roles; as a bridge that connects general public to government, as a monitoring agency to improve public service, as a community integrated body to improve living conditions. This multi – faceted body was designed to bring desirable changes in the community. Twelve years down the line, the VHSNCs are still figuring out their role and identifying their capacities. It is important that members realize the potential, gain clarity over VHSNCs objectives and identify means to achieve them and develop a sense of ownership towards such committee.

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EXTENT OF UTILIZATION AND PROBLEMS FACED BY THE TOURISTS WITH TOUR AND TRAVEL AGENCIES

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ABSTRACT

Tourists require a wide range of tourism related services, ranging from assistance in procuring a passport, visa, airline tickets, accommodation, information about the destinations and attractions, local transport and other services. Tour and travel agencies provide these services and tourists opt to utilize these for their convenience and comfort. A customer may be disappointed or face problems with tourist product provided by a travel and tourism organization. Consumer satisfaction must be the objective to ensure success. Hence a study was conducted to find out the extent of utilization of tour and travel agencies and to ascertain the extent of problems faced by the tourists from services provided by tour and travel agencies. The data were gathered through interview schedule from a sample of 120 families residing in Vadodara city, selected through snowball sampling method who had undertaken tours during 5 years (2007 to 2011) through tour and travel agencies. Descriptive and relational statistics were used for presenting results. The findings of the study revealed that the major decision maker regarding tours undertaken by the selected families were the husbands. They had undertaken 253 tours in that time span through the travel agencies. During the tour, a wide majority of the tourists got the facilities for medical services, adequate safety and possibility of shopping. More number of reservation and ticketing related problems were faced by the respondents in comparison of other facilities provided by agencies. Majority of the respondents faced low extent of problems with the facilities provided by travel agencies.

Keywords: tourist, travel agencies, utilization, problems

INTRODUCTION

Human mind has an innate bent towards travel. Since the earliest stages of human evolution, man had the desire to travel spurred by the need for survival. The purpose of travel moved from pure survival needs to wider reasons such as business, sports, exploration, etc. Travel before industrial revolution was largely for pilgrimage, for business or for official purpose (Andrews, 2009).

Theobald (1994) suggested that "etymologically, the word "Tour" is derived from the Latin, 'tornare' and the Greek, 'tornos', meaning 'a lathe or circle; the movement around a central point or axis'. Tourism is the act of travelling away from home. People always have misconception about travel and tourism, though they both are not synonyms. According to Ghosh (2008), "all tourism involves travel but all travel is not tourism. All tourism occurs during leisure time but all leisure time is not given to tourist pursuits. "

According to **Biwal, Joshi and Roday (2010)**,

“A tourist is a temporary visitor to a place. When people leave their usual place of residence and work to have change from their usual routine for a short time, they are called tourists. They stay at the place overnight, i.e. for at least 24 hours.”

In present days most of the people are unable to find leisure time for their family members during working days. Hence, they feel it as an opportunity to go out on tourism. They prefer to go for recreation and relaxation tourism, pilgrimage, religious tourism, social and cultural tourism and spend time and money with a view to depart from their daily chores and stress.

Tourists require a wide range of tourism related services, ranging from assistance in procuring a passport, visa, airline tickets, accommodation, information about the destinations and attractions, local transport and other services. Tourism suppliers (Travel Agencies, Tour Operators, and Travel Agents) of the tourism industry need to approach their potential customers and meet their needs effectively and efficiently (**Biwal, Joshi and Roday, 2010**). Travel agencies have become an integral part of the world-wide travel, tourism, and transportation industry. A travel agency is a retail business that sells travel related products and services to customers on behalf of suppliers such as airlines, car rentals, cruise lines, hotels, railways, sightseeing tours and package holidays that combine several products.^[1]

Tourism, as a product, when defined in a complete way, includes not only the three components of accommodation, transportation and locale but also the experiences of tourist. The satisfaction or disappointment is a result of experience of the tourist product. Tourists may face problems with services provided by the tour/travel agency. A customer may be able to claim if he/she is disappointed with tourist facilities and services provided by a travel and tourism organization. Consumer satisfaction must be the objective of tour agency to ensure success.

Since the travel and tourism agencies have mushroomed in past some years, it becomes important for the consumer to know about a reliable and reputed company so as to be sure of money's safety, comfort and convenience, cost effective experience with no problems provided while on tour. Hence, a few research questions arise: How many tourists use services of tour and travel agencies? What are the reasons to select particular agencies? Do the consumers face problems of any kind? With this background a research was undertaken with the following objectives.

OBJECTIVES OF THE STUDY

1. To ascertain the extent of utilization of tour and travel agencies by tourists
2. To find out reasons to go on tour through a tour and travel agency
3. To study the extent of problems faced by the tourists regarding tour and travel agencies in relation to services provided by them

METHODOLOGY

A study having descriptive research design was conducted on 120 families, residing in Vadodara city. They were selected through snowball sampling method, who had undertaken tours in the period of 5 years (2007-2011) through tour and travel agencies. The key decision maker of the family regarding tours undertaken was the respondent. The tool consisted of interview schedule

which contained questions regarding background information of the respondents and a summated rating scale to assess the extent of problems faced by the tourists from the services provided in tours by tours and travel agencies. The scale was developed by the researcher and was duly validated. The data were gathered in 2012 and were analyzed using descriptive as well as relational statistics.

Hypothesis: The extent of problems faced by tourists from services provided by tour and travel agencies would vary with selected variables viz. -Income of the family and Extent of Utilization of tour and travel agencies

MAJOR FINDINGS

Family member selected as respondent for tours undertaken

The families were asked to tell who was/were key decision maker(s) in the family for tours undertaken. In case of joint decisions, the one who was available at the time of data collection and was willing to co-operate was taken as key respondent.

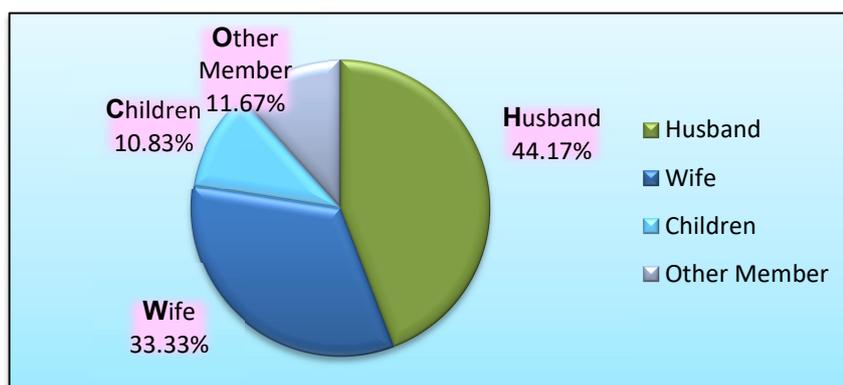


Figure 1: Distribution of Family members as respondent

Fig.1 revealed that less than one half of the respondents were husbands, as, they were the main decision maker for the tours undertaken by the family. One third of the total respondents were wives where as few of the responses were given by children and other family members for the tours undertaken by the family.

Personal and Family Characteristics of the Respondents

Since the respondents were different, personal and family information about each is presented.

Table 1: Distribution of the respondents according to their Personal and Family Characteristics

Sr. No	Personal and Family Characteristics	Respondents n=120									
		Husband n=53		Wife n=40		Children n=13		Other Member n=14		Total n=120	
		f	%	f	%	f	%	f	%	f	%
1	Age of the respondents (in years)										
	21-30 years	15	12.50	9	7.50	13	10.83	—	—	37	30.83
	31-40 years	14	11.67	20	16.67	—	—	—	—	34	28.33
	41-50 years	15	12.50	10	8.33	—	—	—	—	25	20.83
	51-60 years	9	7.50	1	0.83	—	—	14	11.67	24	20.00
		53	44.17	40	33.33	13	10.83	14	11.67	120	100.00
	Mean		39.53		36.60		23.00		54.14		38.47
2	Education of the respondents										
	H.S.C	4	3.33	2	1.67	1	0.83	—	—	7	5.83
	Diploma	4	3.33	3	2.50	—	—	—	—	7	5.83
	Graduation	17	14.17	11	9.17	7	5.83	2	1.67	37	30.83
	Post Graduation	25	20.83	21	17.50	5	4.17	10	8.33	61	50.83
	PhD	3	2.50	3	2.50	—	—	2	1.67	8	6.67
		53		40		13		14		120	100.00
3	Occupation / Study of the respondents										
	Business	15	12.50	8	6.67	3	2.50	2	1.67	28	23.33
	Service	33	27.50	28	23.33	2	1.67	6	5.00	69	57.50
	Non Employed	5	4.17	4	3.33	—	—	6	5.00	15	12.50
	Students	—	—	—	—	8	6.67	—	—	8	6.67
		53	44.17	40	33.33	13	10.83	14	11.67	120	100.00
4	Monthly Family Income (in `)										
	≤ 20,000 `	2	1.67	5	4.17	1	0.83	—	—	8	6.67
	` 20,001 to 40,000	17	14.17	15	12.50	5	4.17	5	4.17	42	35.00
	` 40,001 to 60,000	14	11.67	13	10.83	6	5.00	—	—	33	27.50
	` 60,001 to 80,000	14	11.67	5	4.17	1	0.83	5	4.17	25	20.83
	` 80,001 to 1,00,000	2	1.67	—	—	—	—	4	3.33	6	5.00
	` 1,00,001 to 1,20,000	4	3.33	2	1.67	—	—	—	—	6	5.00
		53	44.17	40	33.33	13	10.83	14	11.67	120	100.00
	Mean										52,546 `
5	Type of Family										
	Nuclear Family	44	36.67	35	29.17	12	10.00	—	—	91	75.83
	Joint Family	9	7.50	5	4.17	1	0.83	14	11.67	29	24.17
		53	44.17	40	33.33	13	10.83	14	11.67	120	100.00

The age of the respondents ranged from 21 to 60 years, as, the respondents were husband/wife/children or other family members. The mean age of the husband was found to be 39.53 years; that of the wife was 36.6 years. The children who were involved in decision making and hence in responding to the researcher had a mean age of 23 years. Amongst the husband, wife and other members, more respondents had education up to post graduation and more of the children had it till graduation level. More amongst husband and wife as respondents were doing service. Amongst children respondents, more were at the stage of studying than others doing service or business.

The mean family income of the total sample was found to be Rs.52, 546.00 per month. A little more than one third had it ranging between Rs. 20,001 and 40,000. A little more than one fourth had it ranging between Rs. 40,001 and 60,000. Three fourth of the respondents were living in a joint family.

Extent of Utilization of Tour and Travel Agency: This section includes the details about number of tours undertaken by respondents in last 5 years, which reflects the extent of utilization of tour and travel agency. It was found that from total number of tours, more number of tours had been undertaken in the year 2009 by respondents. Little more than one fifth of the respondents travelled in year 2008.

Figure 2 reveals that one half of the respondents had undertaken tour once in five years through travel agency. About one fifth of the respondents had gone on tour twice in 5 years. Very few of the respondents had undertaken three tours in 5 years and others had undertaken 5 and 6 tours between years 2007 to 2011. Thus, majority of the respondents had utilized the tour and travel agencies to a low extent.

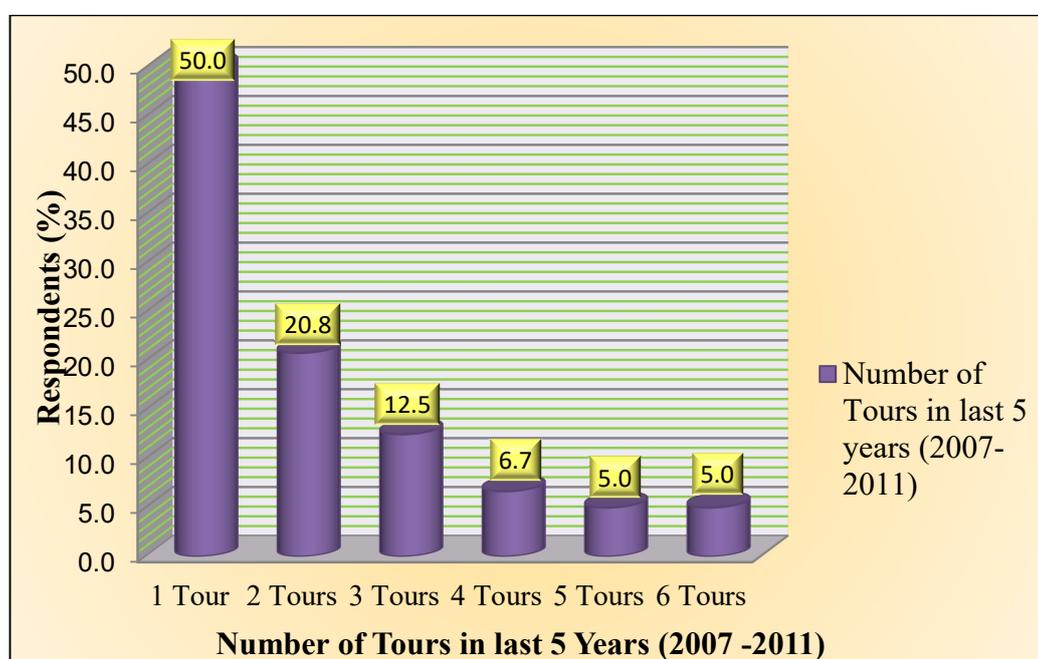


Figure 2: Distribution of the respondents according to Number of Tours in 5 years through travel agency

Level of Tours (Local, National and International Tours) undertaken in 5 years:

It was found that from total number of tours, majority of the tours were at national level. Less than one fifth of the respondents had undertaken local (within Gujarat) tours.

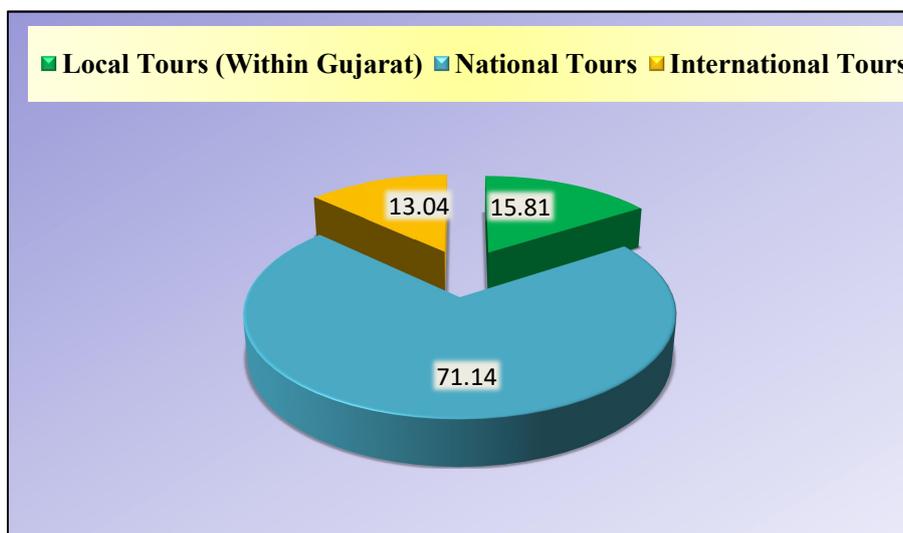


Figure 3: Distribution of the respondents by Local, National and International Tours in 5 years

Very few of the respondents had gone to international tours through travel agency (Fig.3).

Reasons influencing the decision to go on tour through travel agency: Certain reasons which influenced respondents to go on tour through travel agency were identified.

Table 2: Distribution of the respondents by reasons influencing decision to go on tour through travel agency

Respondents	Total	
	f	%
Convenience	129	50.99
Money Aspect	35	13.83
Safety	23	9.09
Facilities	66	26.09
Total no. of tours	253	100.00

It was found that one half of the respondents were influenced to go on tour through tour and travel agencies for Convenience aspect (well planned tour, tailor made and no botheration of reservation, accommodation and food). More than one fourth of the respondents selected travel agency for facilities (Covers all places in sufficient time, homelike food, socialize with group, time pass with friends and luxurious facilities) provided to them by agencies. Very few of the respondents had gone through travel agency for money aspect (Table 2). Terblanche (2008) found that customers use travel agents to assist them with their travel arrangements because of the support and expertise benefits offered by travel agents.

Factors influencing the Choice of agency: Etgar (2008) said that consumers are rational decision makers who want to gain maximum benefit for the money spent. Figure 4 revealed that more than one fourth of the respondents were influenced by experiences of others who visited the place earlier through selected the travel agencies for tours undertaken and amongst them more were those respondents who had undertaken 2 tours in 5 years. Little more than one fourth of the respondents were influenced by the reputation of the travel agency .One fifth of the respondents had chosen travel agencies by their own past experience.

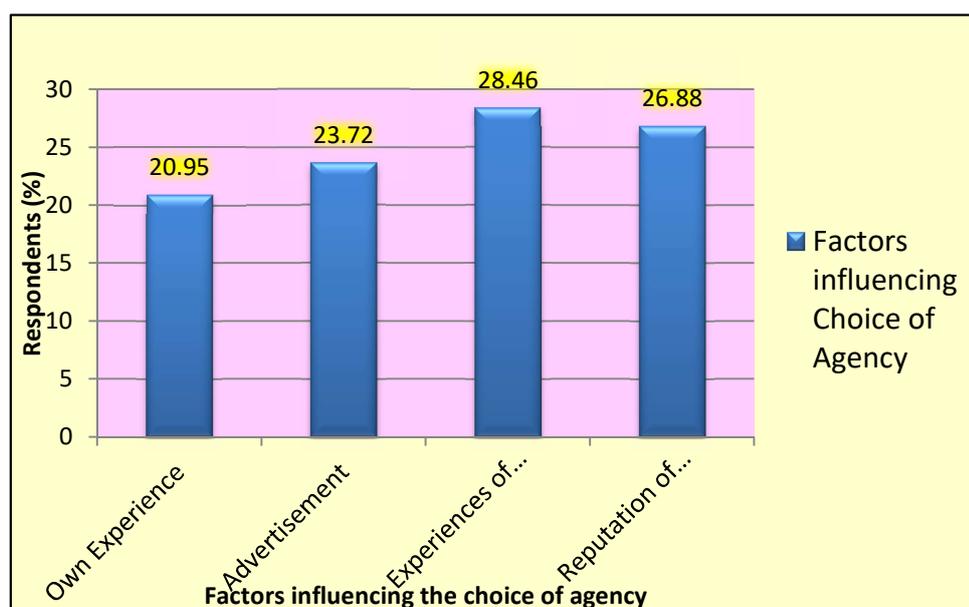


Fig. 4 Distribution of respondents by factors influencing the choice of Agency

Extent of problems faced by the respondents (tourists) with Tour and Travel agencies:

The extent of problems faced by the respondents (tourists) during the tour for the services provided in tours by tours and travel agencies were reported by the respondents on three point continuum i.e. To Great Extent, To Moderate Extent and To Low Extent. Scores of 3 through 1 were ascribed respectively for these responses. Higher the scores, higher could be the problems faced by the respondents. Problems were covered under various subs - headings namely Reservations/

Ticketing, Accommodation, Food, Sight-seeing, Entertainment, Guide/Tour operator, Medical Facility and other miscellaneous facilities.

Table: 3: Distribution of the respondents according to the extent of Problems faced by them for services provided by travel agencies: Reservation and Accommodation

Sr. No	Problems Faced by the respondents: Reservation & accommodation							
	Extent	To a Great Extent		To Moderate Extent		To a Low Extent		Intensity Index (Weighted Mean) (1-3)
	Sub-aspect of problems	f	%	f	%	f	%	
RESERVATIONS/TICKETING								
1	Provision of Tickets and health documents	14	5.53	24	9.49	215	84.98	1.21
2	Travel reservation in train/ Bus	20	7.91	17	6.72	216	85.38	1.23
3	Hiring vehicle	32	12.65	20	7.91	201	79.45	1.33
								1.25
ACCOMMODATION								
1	Provision of 2/3/4/5 star hotel	6	2.37	13	5.14	234	92.49	1.10
2	Other kind of accommodation	15	5.93	8	3.16	230	90.91	1.15
3	Cleanliness and hygiene in rooms and surroundings	15	5.93	10	3.95	228	90.12	1.15
4	Comfortable and well ventilated rooms	15	5.93	8	3.16	230	90.91	1.15
5	Comfortable and Clean Furniture	15	5.93	8	3.16	230	90.91	1.15
6	Clean Bed and Bath Linen	10	3.95	19	7.51	224	88.54	1.15
7	Privacy of the accommodation	15	5.93	22	8.7	216	85.38	1.21
8	Provision of sanitary facility	15	5.93	20	7.91	218	86.17	1.20
9	Provision of drinking water facility	15	5.93	14	5.53	224	88.54	1.17
10	Safety in Hotel	15	5.93	14	5.53	224	88.54	1.17
11	Behavior of staff at the place of accommodation	15	5.93	16	6.32	222	87.75	1.18
12	Catering and Room services	11	4.35	18	7.11	224	88.54	1.16
								1.07

It was revealed that majority of the respondents faced low extent of problems regarding reservation and accommodation provided by the agency. However, it was reported that, in relation to

accommodation many of respondents faced problems regarding comfortable and clean furniture, well ventilated rooms, privacy of accommodation, poor sanitary facilities.

Table: 4: Distribution of the respondents according to the extent of Problems faced by them for services provided by travel agencies: Food and sight seeing

Sr. No	Problems Faced by the respondents							
	Extent	To Great Extent		To Moderate Extent		To Low Extent		Intensity Index (Weighted Mean) (1-3)
	Sub -aspect of problems	f	%	f	%	f	%	
FOOD								
1	Numbers of meals	10	3.95	8	3.16	235	92.89	1.11
2	Punctuality of timings of meals	11	4.35	14	5.53	228	90.12	1.14
3	Quantity of the food	8	3.16	18	7.11	227	89.72	1.13
4	Quality of the food	8	3.16	17	6.72	228	90.12	1.13
5	Taste of the food	8	3.16	16	6.32	229	90.51	1.13
6	Sanitation and hygienic condition at the place of food	4	1.58	15	5.93	234	92.49	1.10
7	Safe drinking water	4	1.58	19	7.51	230	90.91	1.18
8	Facility for special meal, e.g. Jain Food	4	1.58	14	5.53	235	92.89	1.08
9	Provision of traditional food at new places	3	1.19	15	5.93	235	92.89	1.08
10	Adequacy of time provided to have meal	3	1.19	12	4.74	238	94.07	1.07
								1.11
SIGHT SEEING								
1	Provision of vehicle for local sight seeing	9	3.56	14	5.53	230	90.91	1.13
2	Quality of vehicle	2	0.79	17	6.72	234	92.49	1.08
3	Smooth and safe driving by the driver on the road	14	5.53	4	1.58	235	92.89	1.13
4	Adequacy of seats	4	1.58	19	7.51	230	90.91	1.11
5	Quality of seats	14	5.53	6	2.37	233	92.09	1.13
6	Comfort in vehicle	14	5.53	7	2.77	232	91.70	1.14
7	Provision of time at one place of site	4	1.58	19	7.51	230	90.91	1.11
8	Punctuality of the programme during the tour	2	0.79	18	7.11	233	92.09	1.09
9	Provision of the trekking	14	5.53	6	2.37	233	92.09	1.13

	facility							
10	Facility of rope way /lift for ease in climbing	4	1.58	19	7.51	230	90.91	1.11
								1.11

Though majority of the respondents faced low extent of problems regarding food and sightseeing, some respondents faced problems in vehicles of sightseeing. They faced high extent of problems regarding driving, seats and comfort in the vehicles. Some respondents faced problems to a moderate extent regarding quality, quantity, taste and punctuality of food and safe drinking water. Some did face problem regarding “Jain Food “to some extent.”

Table: 5: Distribution of the respondents according to the extent of Problems faced by them for services provided by travel agencies: Guide/tour operator, medical facility and miscellaneous aspects

Sr. No	Problems Faced by the respondents							
	Extent	To Great Extent		To Moderate Extent		To Low Extent		Intensity Index (Weighted Mean) (1-3)
	Sub-aspect of problems	f	%	f	%	f	%	
GUIDE / TOUR OPERATOR								
1	Knowledge of tourist guide	11	4.35	20	7.91	222	87.75	1.17
2	Presentation of tourist guide	11	4.35	19	7.51	223	88.14	1.16
3	Nature of the tour operator	11	4.35	20	7.91	222	87.75	1.17
4	Care and attention provided by tour operator	11	4.35	20	7.91	222	87.75	1.17
								1.16
MEDICAL FACILITY								
1	Provision of First Aid box	6	2.37	29	11.46	218	86.17	1.16
2	Provision of help in emergency	6	2.37	29	11.46	218	86.17	1.16
								1.16
MISCELLANEOUS								
1	Time Provided for shopping	16	6.32	4	1.58	233	92.09	1.14
2	Provision of sufficient days at one place	2	0.79	8	3.16	243	96.05	1.05
3	Refund facility according to the rules and regulation	15	5.93	65	25.69	173	68.38	1.38
4	Facility for local travelling	6	2.37	10	3.95	237	93.68	1.09
5	Number of halts provided so the journey does not	10	3.95	13	5.14	230	90.91	1.13

	become tiring							
6	Parking facility	2	0.79	7	2.77	244	96.44	1.04
7	Provision of money exchangers during tour and place of destination	15	5.93	10	3.95	228	90.12	1.16
8	Communication facility during tour and place of destination	6	2.37	33	13.04	214	84.58	1.18
9	Behavior of the local people	9	3.56	13	5.14	231	91.30	1.12
10	Cases of theft	20	7.91	41	16.21	192	75.89	1.32
11	Provision of safeguard against being cheated through over charging, mis-direction, bad quality products etc .at various places	20	7.91	35	13.83	198	78.26	1.30
12	Personal safety and security during tour	0	0.00	18	7.11	235	92.89	1.07
13	Tour route [in terms of journey, time wasting]	9	3.56	14	5.53	230	90.91	1.13
14	Cost of the services provided in tours by travel agency	6	2.37	13	5.14	234	92.49	1.10
								1.15

Very few of the respondents faced problems related to Refund facility according to the rules and regulation, Provision of safeguard against being cheated through over charging, mis-direction, bad quality products, Cases of theft etc ,medical facility, communication facility during tour, number of halts provided during journey, parking facilities, behavior of the local people.

Table: 6: Intensity of various aspects of Problems: Category wise Weighted Mean

Sr. No.	Aspect of Problem	Weighted mean of category (Range-1to3)
1	Reservations/Ticketing	1.25 (1)
2	Accommodation	1.07 (6)
3	Food	1.11 (5)
4	Sight Seeing	1.11 (5)

5	Entertainment	1.14 (4)
6	Guide / Tour Operator	1.16 (2)
7	Medical Facility	1.16 (2)
8	Miscellaneous	1.15 (3)
	Overall weighted mean	1.14

According to the obtained weighted mean, reflecting comparative intensity of the problems, it was found that it was higher for reservation and ticketing related problems faced by the respondents in comparison to Guide, medical facilities, miscellaneous problems, Food and sightseeing services and accommodation provided by agencies during tours. However, overall mean was on the lower side in the range of 1 to 3 score. This endorsed that the tourists faced lower extent of problems.

Table: 7: Overall Extent of Problems faced by tourists in relation to services provided by travel agencies

Extent of Problems	Respondents (n = 120)		
	Score Range	f	%
To Low Extent	58 - 96	115	95.00
To Moderate Extent	97 - 135	3	2.5
To Great Extent	135 - 174	2	1.67

The possible scores on the entire problem scale was divided in to 3 categories based on equal interval. Table 7 revealed that majority of the respondents faced “Low Extent” of problems in relation to services provided by travel agencies. Amongst all of the respondents only two of the respondents faced “Great Extent” of problems for services provided by travel agencies.

Ho: The extent of problems faced by tourists from services provided by tour and travel agencies would not vary with the selected variables (Income of the family and Extent of Utilization of tour and travel agencies)

The results of ANOVA revealed that the extent of **problems faced** by tourists from services provided by tour and travel agencies did not vary with the variables (Income of the family and Number of tours). Thus, the null hypothesis was accepted .The number of tours reflected the extent of utilization of travel agency.

Table: 8: Analysis of Variance for the selected Variables with the extent of problems faced by tourists from services provided by tour and travel agencies

Variables	Respondents = 120 and Number of Tours = 253				
	df	Sum of squares	Mean Squares	'F' ratio	Level of significance
Income of the family					
Between Groups	18	2883.95	160.21	0.671	N.S.
Within Groups	101	24125.94	238.86		
Extent of Utilization of tour and travel agencies					
Between Groups	5	1834.92	366.98	1.84	N.S.
Within Groups	247	49177.49	199.10		

Note: d.f. = Degree of freedom N.S. = Not significant

CONCLUSION

The findings of the present study have given insight about the problems faced by tourists regarding services provided by the agencies. This would help the travel agencies to improve their facilities for tourist satisfaction. The findings will also help tourists regarding their own expectation regarding tours and assess their satisfaction gained from the services provided by travel agencies. The tourists would become aware of the facilities provided by the travel agencies. They can seek these facilities from the travel agencies if they are not providing. There is a need to make the potential tourists more aware about the points to consider while selecting a travel agency for tour. There is a need to conduct more research on this aspect to study the trend in the services provided by the tour and travel agencies and to assess whether there is any change in the pattern of problems faced and satisfaction experienced by the tourists.

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IMPACT OF SALES PROMOTION TECHNIQUES ON BUYING BEHAVIOUR OF HOMEMAKER REGARDING THE HOUSEHOLD SUPPLIES

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ABSTRACT

There are varieties of products available in the market of different brands. To compete within the market these brands use different promotional strategies which attract the consumers towards their brands. This results in increase of sales and helps the marketer to attract new consumers. Since the investigator belonged to Family and Community Resource Management Department, it has been observed that homemaker have been increasingly taking up interest in maintaining hygiene and sanitation of family members as well as their surroundings for which they take interest in buying different sanitation and hygiene products for household use. But they buy the products not by gaining knowledge about the product, instead, by getting influenced by the sales promotion techniques of the marketers and purchase them. The present study was conducted to identify the impact of sales promotion techniques on buying behaviour of homemakers regarding the household supplies available in the market. The study was conducted in Vadodara city, Gujarat, India. The sample of the present study comprised of 160 homemakers from various areas of Vadodara city. The sample was the homemakers of middle class households who themselves indulged in buying household supplies. Purposive sampling method was adopted for selecting the sample. For the present study a structured questionnaire was selected to get the detailed information about the respondents. Looking through the intensities it was found that majority of the respondents had a high impact of the sales promotion techniques, such as ,the “Buy One Get One” offers, “Cash Back”and “Combo Offers”.

Keywords: sales promotion techniques, buying behavior, household supplies

INTRODUCTION

Life, liberty and the pursuit of happiness are said to be the non-transferable rights of man but no one can enjoy these without good health. The great factor in efficiency is health, greatest resource of individual is health and strength, and the greatest principles of which this is a product are the principles of hygiene and sanitation. Sanitation and hygiene is one of the major aspects in one's life now-a-days and so the demand mainly for the sanitation and hygiene products for the household use is also increasing. People are now becoming aware of the importance of the sanitation and hygiene in one's life. Hence, they go for buying such products very frequently to keep themselves and their surroundings healthy. There is a variety of products available in the market of different brands and so, to compete within the market, these brands use different promotional strategies which attract the consumers towards their brands. This results in increase of sales and helps the marketer to attract new consumers. Now-a-days, in this globalization era, the market is enormous and a business has more competitors to compete with (Pathmini, 2016). India's consumer market is raising the crest of country's economic boom. The consumer purchase decision

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has been influenced significantly with access to disposable income, easy finance option, steady income gains.

The demand for products, the products, mainly, used for maintaining the household sanitation and hygiene has been increasing consistently due to the increase in awareness regarding the importance of sanitation and hygiene in one's life. Today everyone has understood that all the money, cars, big house and a lavish lifestyle is useless if one is not healthy enough to enjoy it.

There are various brands in Indian market dealing with sanitation and hygiene products for household use. The purchase decision related to the products depends on various factors like brand, quality, advertising, offers, discounts, mode of payment and many more (Soni and Verghese, 2013).

Sales promotion acts as a competitive weapon by providing an extra incentive for the target audience to purchase. Many of the purchase situations are so common and habitual that they involve very little cognitive activity of the consumers. In such situations motivating the consumers to switch brands or to purchase more items is very hard. One of the benefits of the sales promotion tools is that it stimulates the consumers to compare different brands and evaluate the purchase possibilities in such cases. Hence, different types of promotional tools and promotion strategies are utilized by the marketers according to the preference of the consumers to boost their sales (Ahmed, 2015).

Since the investigator belonged to Family and Community Resource Management Department, it has been observed that homemaker have been increasingly taking up interest in maintaining hygiene and sanitation of family members as well as of their surroundings. For this, they take interest in buying different sanitation and hygiene products for household use, but not by gaining knowledge about the product, instead, by getting influenced by the sales promotion techniques of the marketers and purchasing them.

Hence, a study was undertaken to know about the different household supplies available in the market and the different techniques used by the marketers to attract the consumers. This study would also help the consumers to understand to be careful while buying products for not getting influenced solely by sales promotion techniques used by the sellers. The study would also be beneficial for the marketers as they would get an idea regarding the most prominent selling technique that they can use frequently to attract the consumers.

OBJECTIVE

- To identify the impact of sales promotion techniques on buying behaviour of homemaker regarding the household supplies related to sanitation and hygiene available in the market.

Hypothesis of the study:

There exists a variation in the impact of the sales promotion techniques on the buying behaviour of the homemaker regarding the household supplies due to their independent variables.

METHODOLOGY

The research design of the present study was “descriptive” since the present investigation dealt with the impact of sales promotion techniques on buying behaviour of the homemaker regarding the household supplies. The study was conducted in Vadodara city, Gujarat, India. The sample of the present study comprised of 160 homemakers from various areas of Vadodara city. The samples were the homemakers of middle class households who indulged in buying household supplies. Purposive sampling method was adopted for selecting the sample. For the present study a structured questionnaire was selected to get the detailed information about the respondents. The questionnaire was divided into following sections: **Section I** covered the information regarding the background information of the respondents; namely, name, age, educational level, and occupation and questions related to family data like type of family. **Section II** included the scale to find out the different “sales promotion techniques” that affect the purchase decision of the homemakers. The respondents were asked to respond on a 3 point continuum in terms of “Always”, “Sometimes”, “Never” and the scores from 3 through 1 were ascribed to the responses respectively. To obtain the extent of impact of sales promotion techniques on homemaker for buying household supplies the possible range of scores was divided on equal interval basis. The data were compiled through SPSS package. Descriptive as well as relational statistics were used to analyze the data.

MAJOR FINDINGS OF THE STUDY

The findings are presented under various heads as follows.

Background Information: The mean age was found to be 41.03 years. It was found that educational level of little more than one-half of the respondents was up to graduation level. More than one-fourth of the respondents were post graduate and less than one-fourth of the respondents had their education up to 12th class. It was found that less than one-half of the respondents were in service, 44.4% were not employed and very few of the respondents were self employed. It was found that two-third of the respondents resided in nuclear families and the remaining resided in joint families.

It was revealed that three-fourth of the respondents purchased household supplies related to sanitation and hygiene monthly, less than one-fifth of the respondents purchased every 15 days, very negligible of the respondents purchased weekly and quarterly. It was also found that none of the respondents purchased daily, thrice a week or yearly.

Impact of Sales Promotion Techniques on Buying Behaviour of the Homemaker: The section dealt with the impact of sales promotion techniques on buying behaviour of the homemaker. The scale comprised of 25 statements with the three point continuum response pattern. The respondents were asked to state whether they were affected by the sales promotion techniques “Always”, “Sometimes” or “Never” and ascribed scores were 3 through 1 respectively. To obtain categories of impact of sales promotion techniques, the weighted mean scores were obtained for each statement and then divided into 2 categories on the basis of equal interval to determine the extent of impact into low and high category. The minimum weighted mean score was 1 and the maximum was 3.

Table-1 Distribution of the respondents on the basis of the weighted mean scores obtained for impact of sales promotion techniques on the buying behaviour of the homemaker for the purchase of household supplies related to sanitation and hygiene

		Respondents (n=160)
Sr. No.	Sales Promotion Techniques	Weighted Mean Scores (1--3)
1	Price Discount	2.20
2	Buy One Get One Offers	2.62
3	Free Gifts	2.15
4	Free Coupons and Vouchers	2.07
5	Cash Backs	2.64
6	Combo Offers	2.67
7	Use of Attractive Features	2.09
Overall Weighted Mean		2.34

Based on the weighted mean scores obtained by the respondents, the data revealed, that amongst the different sales promotion techniques the weighted mean score for “Buy One Get One Offers”, “Cash Back” and “Combo Offers” was found to be the highest and “free coupons and vouchers” scored the lowest. The overall weighted mean on all the sub -scales was 2.34 which depicted that the respondents had moderate impact of different sales promotion techniques (Table-1, Figure-1).

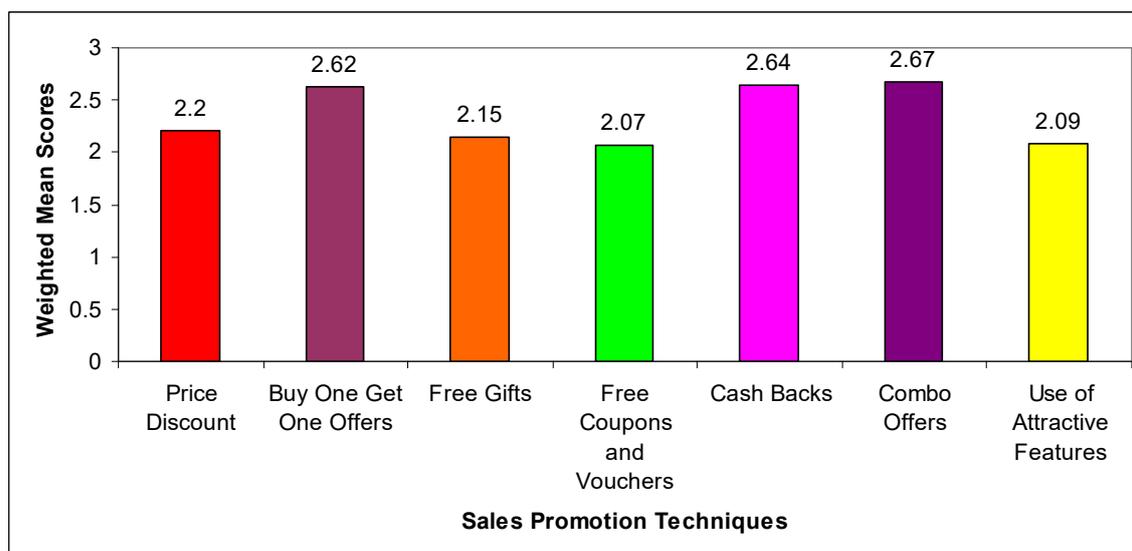


Figure1: Graphical Representation of the weighted mean according to the impact of sales promotion techniques on homemakers for the purchase of household supplies.

On analyzing the data it was revealed that about three-fourth of the respondents (74.32%) had impact to a high extent, and remaining one-fourth of the respondents (25.62%) had low impact of the sales promotion techniques. (Table-2, Figure-2)

Table-2 Extent of Impact of sales promotion techniques on buying behaviour of the homemaker for the purchase of household supplies

Sr. No.	Extent of Impact of Sales Promotion Techniques	Score Range	Respondents f	=160 %
1	Low	1.0 – 2.0	41	25.62
2	High	2.1 - 3.0	119	74.37

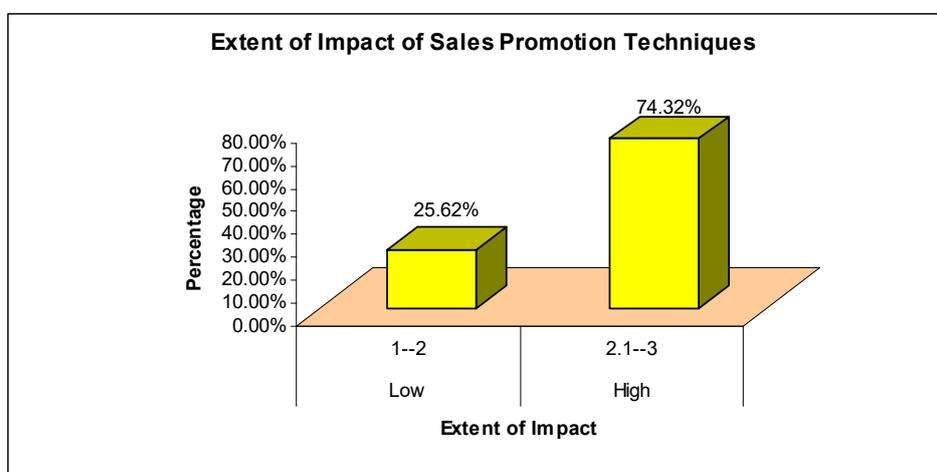


Figure-2 Graphical Representation of the respondents according to the extent of impact of sales promotion techniques on the homemaker for the purchase of household supplies

TESTING OF HYPOTHESES

The hypotheses for the present investigation were tested using appropriate statistics. The F-ratio was computed to find out variation in the impact of sales promotion techniques on the buying behaviour of the homemakers regarding the household supplies available in the market with age, educational level and occupation. The F-ratio was found to be significant with educational level at 0.05 level. While the age and occupation was not found to be significant with the extent impact of the sales promotion techniques on buying behaviour of the homemakers regarding the household supplies available in the market. Hence it was proved that the education level of the respondents affected the impact of sales promotion techniques. Further t-test was applied for finding significant differences in extent of impact of sales promotion techniques on buying behaviour of homemaker regarding the household supplies and the type of family of the respondents. It was depicted that there is no difference in impact of sales promotion techniques by the type of family. Moreover, Scheffe's test was also applied to find out the difference in the extent of impact of sales promotion techniques on buying behaviour due to the educational level. The test revealed that the

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homemakers having education below graduation were highly impacted than the graduates and the post graduates.

Implications of the study: The findings of the present study may prove beneficial to various people concerned with the relevant field.

For Students: The students will be able to know the different marketing strategies used by the marketers to attract the consumers.

For Marketers: The marketers would get an idea regarding the most prominent selling technique that they can use frequently to attract the consumers.

For the Homemakers: The study would also help the homemakers to know about the different household supplies available in the market and the different techniques used by the marketers to attract them.

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CLIENTAL CONCERN: AN EXPEDITOR FOR PRACTICING SUSTAINABLE INTERIOR DESIGN

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ABSTRACT

The growing trends in population as well as building and construction sector in recent years has an immense impact on environment as well as quality of life, which has led to issues related integrally with increased demand on natural resources. As this sector is growing rapidly, preserving the environment poses host of challenges. The environment of the existing residential and commercial establishments can create a sizeable impact on the global environment as well as of the users. Hence, there is a need to design interiors which minimize the issues related to environment deterioration as well as impaired quality of life of the occupants. This augers well for the country and now there is an imminent need to introduce sustainable concepts, technique in this sector, which can aid the growth in ecological manner. Sustainable interior concepts and techniques in residential and commercial establishments can help address various national issues. In wake of increase in natural and man-made disasters, it is sustainable interiors which play a marginal but critical role towards averting major ecological crisis. The sustainable interior design concepts and techniques such as use of materials which are recycled, renewable can be reused in residential and commercial establishments can help address various environmental issues. The major purpose of the present study was to know whether client concern was considered to be an awakening expeditor for practicing sustainable interior design by selected Interior designers. The study was conducted among sixty practicing Interior designers from the Ahmedabad city, who were chosen on the basis of purposive and snowball sampling technique. The findings of the study revealed that cliental concern was found to be a decisive facilitator among majority of the respondents which affected their sustainable interior design practices to a high extent. This in turn promotes the use of renewable products, renewable energy and recycled material which helps in improving the health of the occupants by enhancing the Indoor Environmental Quality. The findings would help the community to become more environmentally sensitive which would sparkle the context and need for sustainable interior design, leading towards better health and well-being of the global ecosystem.

Keywords: Sustainability, Interior design, Cliental concern, Expeditor

INTRODUCTION

Environment is God's gift to humanity. It is well known that earth's surface and the environmental surrounding is important to human health. This environment is being irreversibly degraded day by day due to prevalence of human activities aimed towards economic development and improving man's standard of living. The inevitable outcome of this development and human evolution is the environmental pollution. The preservation of the delicately balanced ecological system is in interest of whole mankind. Public interest in ecology implies concerns for air and water quality and for increasing demand on limited natural resources in the context of increasing population.

According to World Commission on Environment and Development, (1987);

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Sustainable development means “Meeting the needs of the present generation without compromising the ability of future generations to meet their own need”.

The terms sustainable and sustainability have both grown increasingly popular in our culture, and are often used with reference to the natural environment which focuses on responsible management of natural resource (McLean, 2009).

Environmental sustainability is becoming a major concern within the interior design field due to the extensive resources needed for interior use (Ruff & Olson, 2009). Sustainable interior design practices are actions that lessen environmental impact due to site selection, water use, energy use, and material selection (Rider, 2005). With these considerations, Interior designers are able to provide a physiologically and psychologically healthy indoor environment (Kang & Guerin, 2009). Various Interior designers around the world have started their practices which contribute towards a healthy environment along with better and well-being of the occupants, through paradigm shift from ‘environmental irresponsible’ to “environmentally responsible design.”

Overall, environmentally sustainable interior design minimizes negative effects and maximizes positive effects on environmental systems over the life cycle of a building (Kang & Guerin, 2009), by blending solutions of the past with new technology of today (Loftness, 2007). Pilatowicz (1995) defined sustainable interiors as interiors designed in such a manner that they sensibly address the impact of all their functions, parts and elements on the global environment. Further he defined environmentally conscious interior design as “professional practice that attempts to create indoor spaces that are environmentally sustainable and healthy for the occupants.”

The concept of Sustainable Interior Design is closely linked to environment construction and building design efficiency. The interior of residential and commercial areas use some elements which harm the environment in direct or indirect manner. There are paints which contain volatile components (VOC's) and their emissions are harmful, use of non-biodegradable products for furnishings, use of light fixtures which consumes more electric energy, use of materials which are made from nonrenewable resources and many more elements which degrades the environment and also effects the health of the residents with reduction in the life-cycle of the building.

Cargo (2013) interprets that, Sustainable Interior Design Practices are currently making their way into the professional field of interior designing, as there has been a growing concern which focuses on improving the health and well-being of building occupants while reducing the negative impact that the building places on the natural environment.

Sustainable Interior Design Practices should be such which preserves natural environment as well as health and well-being of the occupants. Berman (2008), stated that the practices needed for adopting Sustainable Interior Design are; minimum use of non-renewable energy, produce minimum of pollution and wastes, minimum cost of renewable energy, which would lead in enhancing the health, safety and welfare of the people who live in the surrounding environment, which in turn also preserves the environment.

Sustainable built environments are vital to the overall environmental sustainability effort (Brick & Frostell, 2007). Officially, the profession of Interior design is one that promotes sustainability. Many institutions like American Society of Interior Designers (ASID) and IIDA

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(International Interior Designer Association) promotes the practices through linking it to education opportunities in sustainable design. (International Interior Design Association, 2010B).

Many interior designers hold a general positive ideology for designing sustainable interiors as they perceive environment friendly approach in their designs. However there are fewer interior designers actively practicing sustainable interior design than are professing a positive perception of sustainable interior design (Kang & Guerin, 2009A). Interior design students are also, on average, willing to report having positive attitudes toward the environment. Yet fewer interior design students are willing to claim that it is their personal responsibility to take steps toward protecting the environment (Ruff & Olson, 2009). It is precisely this disconnect between the self-reported positive perceptions of sustainability and actual sustainable interior design in practice that is of concern in this research. Moreover, few of them simply practice designing “green” out of social desirability bias, especially those who work in firms where the leadership advocates environmental sustainability.

There are designers who practice sustainable interior design in order to satisfy client’s environmental concerns. Like designers, clients are also motivated to build sustainably either by ethics, economics, or a combination of both. Interior designers and clients influence each other’s decisions throughout the design process to varying degrees, as it gives long term benefits to clients by reducing their water and energy cost. Moreover, it aids in fulfilling the clients desire with regards to ‘sustainable solutions’, by taking up sustainable strategies to enhance the health and quality of life of the occupants through use of sustainable interior materials.

Therefore, the main objective of the study was to study various expeditors responsible for adopting Sustainable Interior Design Practices by the Interior Designers from the Ahmedabad city.

OBJECTIVES OF THE STUDY

- To study the demographic characteristics of practicing Interior designers from Ahmedabad city.
- To assess various expeditors responsible for adopting Sustainable Interior Design Practices.

METHODOLOGY

The research design for the present investigation was descriptive in nature conducted on 60 practicing Interior designers selected purposively from Ahmedabad city of Gujarat state. The tool to collect data was questionnaire which contained a summated rating scale to find out various expeditors responsible for adopting Sustainable Interior Design Practices among the selected Interior designers. The responses on the scale were subjected to scores. The response structure used to find out various expeditors responsible for Sustainable Interior Design Practices was in terms of “To High Extent”, “To Moderate Extent” and “To Low Extent”. The scores from 3 through 1 were ascribed to the responses. The possible maximum and minimum scores was divided in three categories having equal intervals. The high scores on the scale indicated high extent of influence of the for practicing Sustainable Interior Design among the selected Interior designers. The scale was subjected to establishment of content validity and reliability. The tool prepared was validated from a panel of 11 experts from different departments, faculty and the Universities. The reliability coefficient derived for the scale was 0.83.

MAJOR FINDINGS

1) Personal variables of the respondents

a) Background information of the Interior designers from Ahmedabad city

This section deals with personal information regarding selected Interior designers of Ahmedabad city. It contains information regarding their age, gender and Educational qualification.

- (i) **Age and gender of the respondents:** The findings revealed that nearly one-half (48.3%) of the respondents were in the age group of 31 – 41 years. Very few of the respondents i.e. 16.7 per cent were from the age group of 21 – 30 years. The minimum age of the respondent was found to be 23 years while the maximum age was 53 years with a mean age of 38.27 years. The findings further also highlighted that majority i.e. 71.7 per cent of the respondents were male and remaining i.e. 28.3 per cent of the respondents were female (Fig.: 1).
- (ii) **Educational qualification:** The data pertaining to the educational qualification of respondents, revealed that slightly more than one-third (35%) of respondents were holding Bachelor's degree in Interior design, whereas very few (15%) of the respondents had done their Master's degree in Interior design. Moreover, less than one-fourth (20%) of respondents had done their diploma in Interior design and remaining of them had their qualification in the field of architecture and civil engineering (B.Arch., B.E. Civil).

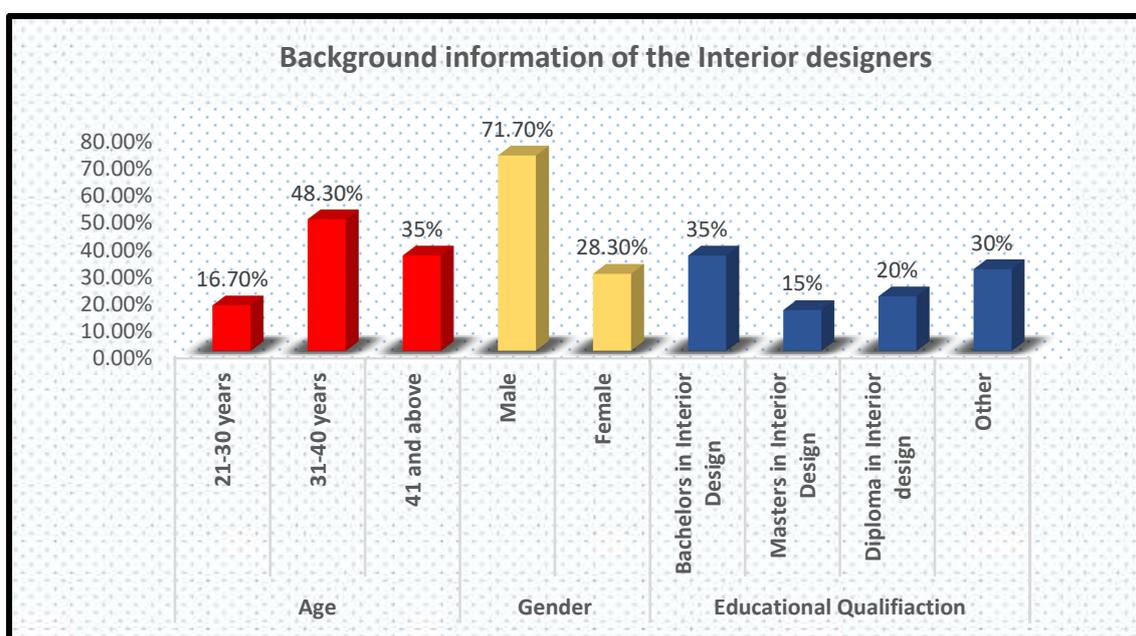


Figure 1: Distribution of respondents according their background information

2) Situational variables of the respondents

It contains information regarding their work experiences, kinds of projects undertaken by them and sources of information through which they were informed about the Sustainable Interior Design.

- (a) **Duration of time working as an Interior designer:** The findings revealed that around one-third of the respondents (33%) had been working since 16 years and more in field of Interior design, little less than one-fourth (23.3%) of respondents had been working since 11 – 15 years, slightly more than one-fourth (26.67%) of respondents had been working since 06-10 years while very few of them i.e. 16.67 per cent had work experience of less than 5 years.

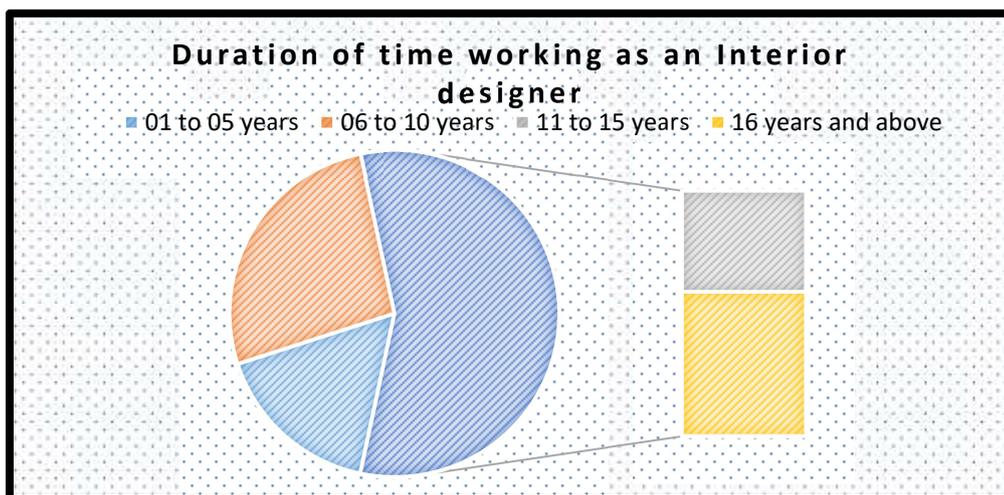


Figure 2: Distribution of respondents according their duration of time working as an Interior designer

- (b) **Number and kinds of Interior design projects undertaken by the respondents:** The findings analyzed that more than one-half (55%) of the respondents had taken up commercial projects ranging from 01 – 25 in number. One-fourth of the respondents (25%) had taken up more than 50 commercial projects. Moreover it was also revealed that less than one-fourth (20%) had taken up commercial projects ranging from 26 - 50 in number.

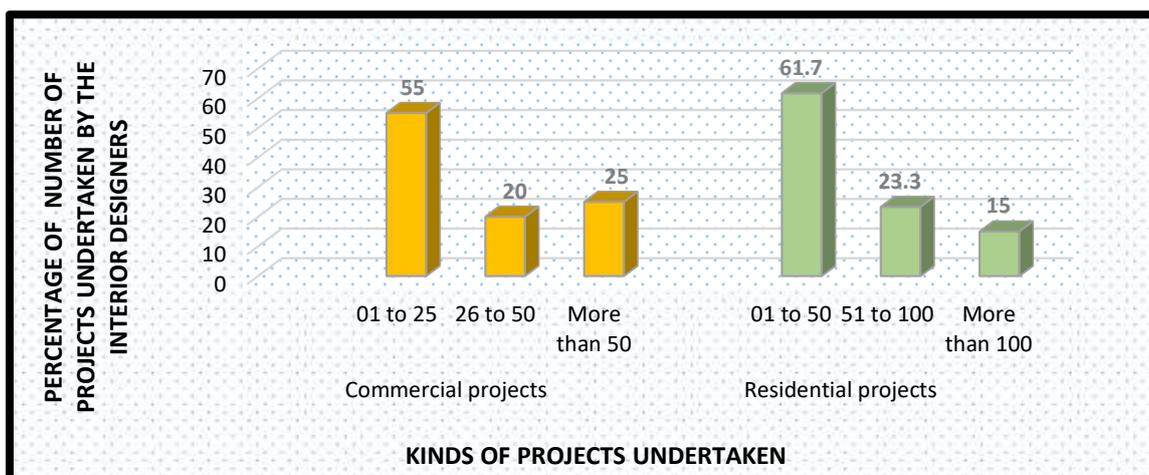


Figure 3: Distribution of respondents according to number and kinds of Interior design projects undertaken

3) Findings related to various expeditors that influenced Sustainable Interior Design Practices

The findings depicted various expeditors that influenced the Interior designers to adopt Sustainable Interior Design in their practice. These expeditors were categorized into four sub aspects viz. ‘Cliental concerns’, ‘Environmental aspect’, ‘Economic aspect’, and ‘Personal goal and satisfaction’. The responses were sought and scores were interpreted in terms of ‘To high extent’, ‘To moderate extent’, and ‘To low extent’, which were ascribed the scores of 3 through 1.

The computed weighted mean for each expeditor which influenced in adopting Sustainable Interior Design Practices revealed that ‘Cliental concern’ was the most influential expeditor for adopting Sustainable Interior Design Practices by Interior designers of Ahmedabad city (Fig.: 4).

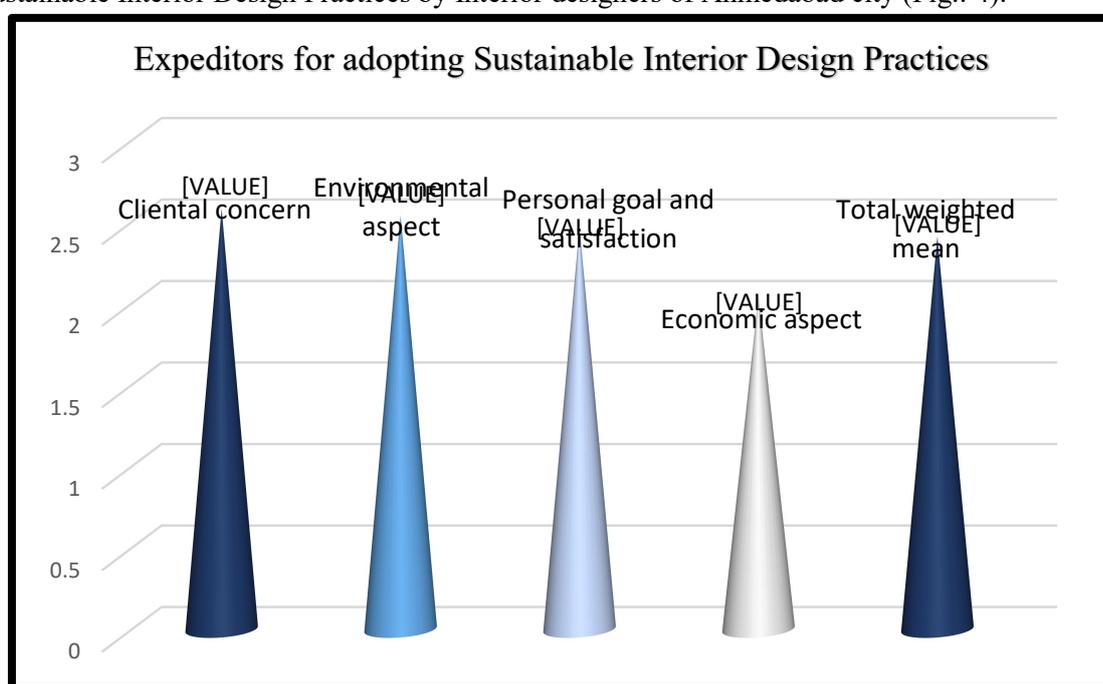


Figure 4: Weighted mean scores for the extent of influence of various expeditors responsible for Sustainable Interior Design Practices

4) Cliental concern as an expeditor tor for practicing Sustainable Interior Design

The findings highlighted in Table 1, that more than three-fourth (76.7%) of Interior designers were highly influenced to practice Sustainable Interior Design as it led to provision of better health and quality of life for clients by improving the indoor environment quality through use of sustainable interior materials. A similar trend was also found as about seventy per cent of the respondents were highly influenced to practice Sustainable Interior Design as it provided long term benefits to clients by reducing their water and energy cost. Moreover, the findings also indicated that more than one-half (58.3%) of the respondents experienced “high extent” of influence by the ‘client driven expeditor’, as, it helped in educating clients regarding the sustainable design strategies and also led to feeling of satisfaction experienced by the clients due to adoption of sustainable interior design respectively. The data also revealed that less than one-half (45.0%) of the respondents were “moderately” influenced by the motivator which aimed to fulfill client’s

desires with regards to provision of sustainable solutions by designing sustainable interiors for them.

Table 1: Frequency and percentage distribution of respondents according to the extent of influence with regards to Cliental concern as an expeditor for adopting Sustainable Interior Design Practice

Sr. No.	Cliental concern	Respondents (n=60)						Weighted Mean (1 - 3)
		To High Extent		To Moderate Extent		To Low Extent		
		f	%	f	%	f	%	
1.	It gives long term benefits to clients by reducing their water and energy cost.	42	70.3	08	13.3	10	16.7	2.53
2.	Provision for better health and quality of life of clients by improving indoor environment quality through use of sustainable interior materials.	46	76.7	13	21.7	01	01.7	2.75
3.	Sustainable interior helps to fulfill clients desires with regards to ‘sustainable solutions’	29	48.3	27	45.0	04	06.7	2.42
4.	Sustainable interiors design enhances the quality of life of the clients by creating healthy indoor environment.	40	66.7	19	31.7	01	01.7	2.65
5.	It helps to educate the clients regarding the sustainable design strategies.	35	58.3	23	38.3	02	03.3	2.55
6.	It leads to feeling of satisfaction experienced by the clients due to adoption of sustainable design practices	35	58.3	23	38.3	02	03.3	2.25
Total weighted mean								2.58

In addition to ‘cliental concerns’, there are several ‘economic’ reasons for practicing sustainable interior design. These reasons include aspects like -lower life-cycle costs or fossil fuel consumption, improved occupant health, as well as competitive advantage in branding and in attracting environmentally conscious consumers and end-users. To date, the economic advantages of sustainable building design, primarily those pertaining to energy efficiency and life-cycle costing, have received the vast majority of scholarly attention. At this time, relatively little research has been done regarding ethical, consumer-driven, or health-related motivations for sustainable building or interior design. This is likely due to the fact that most of the research on sustainable design is quantitative in nature. While issues such as life-cycle analysis and energy efficiency can be readily studied using quantitative methods, more esoteric concepts such as perceptions, motivations, and influences are not as easily quantified.

CONCLUSIONS AND IMPLICATIONS

Interior environments are the places that meet the human needs. They are the most intimate environment to its users. The willingness to create sustainable environments should be first met in the interiors. By playing close attention to the materials, finishes and sealants that are selected for a space an Interior designer can greatly impact the lives of the occupants. Materials and products that often contains high volatile organic compounds (VOC) are paints, coatings, adhesives, carpeting and composition flooring, and these should be carefully selected and used. Sustainable interior design has become a powerful communication tool of the commercial world, which is demonstrating a revolution in the construction industry. It is imperative that the designers begin implementing the sustainable solutions, so as to be prepared for the increasing environmental policy and legislation that is sure to be followed tomorrow, as more natural resources are depleted. Perhaps, it's the time to readdress one's values of the product appearance and material culture in order to tackle the environmental degradation that can result from the steps of design process. In the process the cliental concern from the Interior designer point of view also plays a vital role as it encourages the sustainable practice as well as enhance the quality of overall indoor space. Moreover, it all goes hand in hand to meet the sustainability at global pace. The main challenge for all types of interior designers is to find ways of bringing together the local and the global, to create designs that suit modern, technologically and economically developed societies. This may involve 're-designing' their own designs, a completely new way of working. Interior design decisions can no longer be made based on aesthetics, budget and functionality. Designers now have a responsibility to create indoor environments that reflect environmental awareness, environmental protection and sustainability of building itself. Interior designers must now question the effects of their work not only on the natural environment, but also in view of human health; along with the considerations of the effects of their work on humanity.

Based on the findings of the present study, it can be concluded that cliental concern acted a vital expeditor, which influenced majority of the Interior designers to adopt and practice sustainable interior design. Moreover, it specified the positive approach of the design industry towards the sustainability along with environmental conservation by using the locally available materials which can be reused, recycled and those which emitted low harmful emissions.

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IMPACT EVALUATION OF NUTRITION HEALTH EDUCATION ON NUTRITIONAL AND PHYSIOLOGICAL KNOWLEDGE SCORES OF HOCKEY ATHLETES

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ABSTRACT

Nutrition education among athletes is important to maximize athletic performance. It has been well documented that high school athletes lack the knowledge to make good nutritional decisions to improve health, performance and growth. Few athletes also depend on their coaches for nutrition knowledge in certain sports. Also extensive research has proven that there is a deficiency in nutrition knowledge among coaches, trainers and parents at the high school and collegiate level. Hence, 50 Hockey Athletes (29 boys and 21 girls) above age 14 years who were registered in sports authority of Gujarat at Vadodara city were enrolled in the study. Data on knowledge regarding nutritional and physiological aspect were collected. Nutrition Health Education was given in the form of booklets, brochure and presentation. Post data was collected after 90 days on same knowledge based questions. Mean age of hockey athletes was 16.06±2.0 years. 31.11% of boys and 21.33% of girls were shifted in to good knowledge score from fair category after the intervention. Highly Significant difference ($p \leq 0.001$) was found in knowledge score of girls in all three aspects. With respect to boys, highly significant difference was found in knowledge scores of nutritional aspects as well as total knowledge score followed by ($p \leq 0.01$) for physiological aspect. None of the players were under poor and fair category after intervention for nutritional aspect. Thus, it can be concluded that after the intervention, the knowledge score of boys and girls were improved significantly. Majority of players agreed that nutrition education and nutritionist play very important role in sports activity.

Keywords: Hockey, Nutrition Health Education, Sports Nutrition.

INTRODUCTION

In sports, good performance is depending upon the good training, physical activity, workouts, healthy body and proper rest. For healthy body, nutritious and balanced diet is required since it fulfils all the body's macro and micro nutrient requirements. Athletes' body is bombarded with significant stressors due to training at competitive levels, so there is a huge demand of proper nutrition. Therefore, adequate nutrition is pertinent to maintain athlete's performance.

Optimal nutrition can reduce fatigue, allows an athlete to train and compete for longer duration and also to maximize their performance and to recover between training sessions. Few athletes also depend on their coaches for nutrition knowledge in certain sports. Other sources of nutrition information for them include magazine, health food store personnel, coaches and gym owners. Therefore, when coaches are not aware about nutrition, it can become a problem for athletes (Cotugna et al., 2005).

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It has been well documented that high school athletes lack the knowledge to make good nutritional decisions to improve health, performance and growth (Douglas, 1984; Cotugna, 2005). Also extensive research has proven that there is a deficiency in nutrition knowledge among coaches, trainers and parents at the high school and collegiate level. High school athletes and the sources they seek out are not nutritionally literate which may lead to sub-optimal nutrition for these athletes ultimately impacting performance and health.

Athletes receive their nutritional information from a variety of sources; however, it remains consistent that a good information is coming from strength and conditioning coaches or athletic trainers (Jacobson et al. 2001); so, it becomes very important to ensure that right knowledge and information is given or that priority placed on developing relationship with a dietician to share programming work and nutrition knowledge with the rest of athletic team to ensure the information that athletes receive coincides with their goals both individually and as a team. Hence a study was undertaken with the following objectives.

Objectives of the study:

1. To assess the socio-economic status of the athletes
2. To assess nutritional and physiological awareness among athletes
3. To develop appropriate Nutrition Health Education (NHE) material for intervention and to study its impact.

MATERIALS AND METHODS

Locale of the study/selection of sample:

The study was conducted in Vadodara city of Gujarat state. In the present study, hockey athletes above age of 14 years from one of the hockey academy of Vadodara were enrolled in the study. Total 50 hockey athletes (29 boys and 21 girls) participated in the study.

The study was divided into two phases:

1. Collection of baseline data phase
2. Intervention phase.

In first phase, hockey athletes were enrolled in the study after their consent and baseline data was collected on socio economic status and Information on knowledge of athletes regarding nutritional and physiological aspect was collected.

After collection of baseline data, 3 months of intervention was given in the form of Nutrition Health Education (NHE) by distributing booklets, brochure and group presentation.

After three months post data was collected on knowledge of athletes regarding nutritional and physiological aspect.

Tools and techniques

Socio-demographic profile:

A carefully planned questionnaire was designed for collecting detailed information of subjects. This questionnaire includes information about the age, education, occupation, type of family, per capita income and socioeconomic status. For calculating socioeconomic status Kuppuswamy's scale (2009) was used.

Knowledge based data:

Nutrition and health aspect:

This included information regarding the knowledge of important nutrients with respect to sports and their functions, bone related problems, symptoms and sources.

Physiological aspect:

This included general information regarding to exercise, physiological body, exercise and its advantages, various organizations for exercise and about body composition.

Based on the developed questionnaire under “knowledge” and “physiological aspects”, key score was developed and further it was classified under poor, fair and good category.

STATISTICAL TOOLS

Socio-demographic profile:

Present responses were calculated for different socio-demographic variables.

Knowledge assessment:

Present response of the hockey athletes having knowledge regarding nutritional and physiological aspects was calculated as per key scoring and then comparison was made between scores of girls and boys. Paired t test and chi square test was used to calculate significant difference.

FINDINGS AND DISCUSSION

The broad objective of the study was to generate a database on socio-economic data and nutrition and health awareness of hockey players of urban Vadodara.

To achieve the above objectives a total of 50 subjects in the age group of 14 years and above hockey players who registered under academy were included in the study. Results are described, discussed and interpreted in accordance with the objectives:

Table 1: Age and Gender wise classification of hockey players registered under Sports academy

Serial No.	Gender	Age in years	Total % (n)
1	Boy	14-18	62.06 (18)
		>18	37.93 (11)
2	Girl	14-18	100 (21)
		>18	0 (0)

In phase 1 of the study, all the players who were above 14 years of age with their given consent were enrolled. Most of the boys and girls were under 14 to 18 years of age group. 62% boys were below 18 years of age and 37.93% boys were above 18 years of age. None of girl was found above 18 years of age at the time of enrolment.

1. Socio economic profile :

50 subjects (29 boys and 21 girls of hockey) were enrolled in the study who were registered under Sports Academy. The criteria for the selection were purposive sampling. The entire data was collected by visiting them regularly from above mentioned methods. Pre tested questionnaire was used to obtain socio-economic information of the subjects. The assessment include information on age, religion, level of education, duration of playing sport (hours, days and year) and type of family and economic status of the subjects.

- It was found that mean age of the boys was 16.51 ± 2.38 years which are moreover similar to the overall mean age of the both genders which was 16.06 ± 2.0 years of age.
- Mean age of the girl players was 15.42 ± 1.07 years. Majority of the players of the both genders follow Hindu religion which was 89.65 % and 85.71% of boys and girls respectively.
- Number of boys and girls follow Muslim and Christian religions were same.
- The educational level at the time of enrolment was primary level and higher secondary in almost equal proportion among male athletes which were 34.48% and 37.93% respectively. Rest of the boys were in graduation. Most of girls (76.19%) were in higher secondary schooling and 19.04 % of girls were taking primary education. Only one girl was in graduation at the time of enrolment in the study.
- About 72% of total players were belonging from nuclear family and 28% players were belonging from joint family.
- 68.96% of boys and 52.38% of girls were falling under the category of upper middle class.

Knowledge assessment of athletes on nutritional and physiological aspect

Several eating habits and dietary practices may affect on overall health and athletic performance. With this objective knowledge based data related to sports was taken which included awareness for general nutrition, nutrients, body mass index, body composition, importance of nutrition in sports and food sources. It also included knowledge based questions regarding sports activity, nutrition and physical fitness.

Nutritional aspect

Results showed that, before intervention it was noted that most of the players have known about importance of nutrition in sports activity but couple of them were not able to define. After intervention, most of them were able to define meaning of nutrition followed by 72.41% and 90.47% among boys and girls respectively. Before intervention, most of the players were not aware about important macro nutrients for sports and meaning of BMI but after given Nutrition Health Education, there knowledge has been increased which was improved more in girls compare to boys. Knowledge about food sources of different nutrients was also found after given intervention among boys and girls. Before intervention 41.37% boys and 14.28% girls were falling under ‘fair’ category of ‘knowledge Score’ but after the intervention they were found under ‘good’ category. Thus, none of the players were under ‘poor’ and ‘fair’ category after intervention.

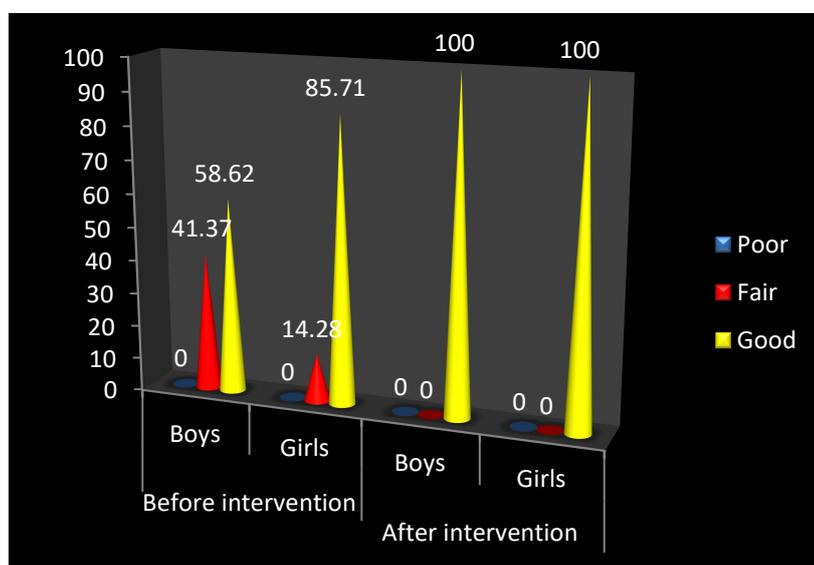


Figure 1: Percentage of athletes showing knowledge score on nutrition aspect

Physiological aspect

Physiological aspect includes general information about weight, body composition, medical problems regards to sports, various fitness tests and food and supplements.

Results showed that almost all the players were aware about importance of appropriate weight, role of weight for athletic performance and meaning of body composition. Players were not more aware

sabot different types of fitness tests, but after given intervention there knowledge about different fitness tests was improved. Around 58.62% boys and 42.62% girls gave correct names of food and supplements for recovery but after given intervention, it was improved up to 86.20% and 90.47% among boys and girls respectively. None of the players were under ‘poor’ category after the intervention. None of the girl was falling in ‘good’ category before intervention in physiological aspect while 37.93% of boys were in ‘good’ category. Thus, it was noted that boys have better knowledge about physiological aspect than girls.

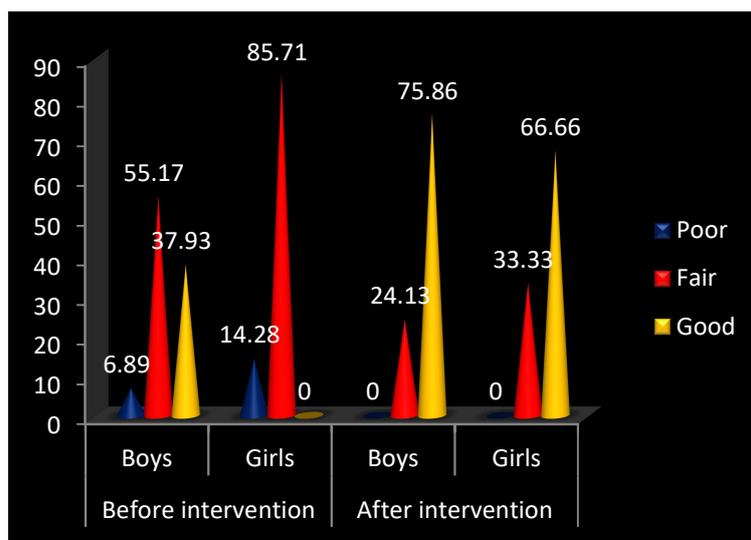


Figure 2: Percentage of athletes showing knowledge score on physiological aspect

Table 2: Mean total knowledge score on sports nutrition in hockey athletes before and after intervention

Knowledge based aspect score	Boys(N=29)		Girls(N=21)		T test	
	Before intervention	After intervention	Before intervention	After Intervention	Boys	Girls
Nutrition aspect						
• Poor	0±0	0±0	0±0	0±0	6.76*	6.85*
• Fair	31.11±6.57	0±0	21.33±6.80	0±0	**	**
• Good	35.72±3.85	42.37±5.95	38.44±4.70	50.76±6.03		
Total	31.64±6.36	42.37±5.95	36±7.81	50.76±6.03		
Physiological aspect						
• Poor	3.5±0.70	0±0	3±1	0±0	3.37*	5.83*
• Fair	8.03±2.04	6.28±1.25	6.5±0.85	7.14±1.46		**
• Good	10±0.95	11.04±1.52	0±0	9.71±0.91		
Total	8.06±2.01	10±2.32	6±1.51	8.85±1.65		

*significant at $p \leq 0.05$, ** significant at $p \leq 0.01$, ***significant at $p \leq 0.001$

Thus, it can be summarized from table 2 that all the boys and girls had good knowledge on nutritional aspect after the intervention, 31.11% of boys and 21.33% of girls were shifted in to

good knowledge score from 'fair' category after the intervention. With respect to physiological aspect, there were no players found under 'poor' category after the intervention. Highly Significant difference ($p \leq 0.001$) was found in knowledge score of girls. With respect to boys, highly significant difference was found in knowledge scores of nutritional aspects as well as total knowledge score followed by ($p \leq 0.01$) for physiological aspect.

SUMMARY AND CONCLUSION

Out of total players, 31.11% of boys and 21.33% of girls were converted in to 'good' knowledge score from 'fair' category after the intervention. Rest of them were already in the 'good' category.

Highly Significant difference ($p \leq 0.001$) was found in knowledge score of girls in both aspects.

After the intervention knowledge score of boys and girls were improved on 'nutritional aspect' and all of them fall under 'good' category.

An intervention for the period of three months was found to be effective to improve knowledge of athletes on nutritional and physiological aspect.

A great game-day performance needs more than just practice. Young hockey player will score with important nutritional guidelines. Thus, nutrition plan should be the daily dose in the athletes training regimen to achieve maximum success.

Module of Nutrition Health education was designed based upon the Health Belief Model which is one of the major Health Behaviour Change Theory. It indicates that earlier athletes had poor or no awareness on interrelationship of nutrition fitness and health with higher impact on body composition and also no awareness for diseases or specific health condition but after intervention, awareness on components of sports nutrition fitness and health was brought about showing some changes in practices reflected the understanding of module theory through the self-efficacy mechanism.

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INCIDENCE OF METABOLIC SYNDROME AMONG ADULTS

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ABSTRACT

Introduction: Metabolic syndrome, also known as Insulin Resistance Syndrome (IRS) and Syndrome X is a cluster of metabolic and anthropometric traits including glucose intolerance, upper body fat distribution, hypertension, and Dyslipidimia (characterised by high triglycerides, low high density lipoprotein [HDL] cholesterol). In terms of public health management metabolic syndrome is responsible for a tremendous burden of human disease and social costs and nutritional therapy is key to both its prevention and limiting its progression to type2 diabetes and CVD.

Aim: The study was under taken with the objectives: 1) To study the incidence of metabolic syndrome among adults. 2) To assess metabolic syndrome based on risk factors and biochemical parameters.

Methodology: The study was conducted at one health care centre at Apollo Hospital North Bangalore. Purposive random sampling method was adopted for the study. Sample of 30 comprising of both male and female in age group of 21-40 years were selected. The respondents were screened with anthropometric measurements, blood pressure was measured and fasting blood glucose and lipid profile were tested. Based on IDF guidelines 2005, metabolic syndrome respondents were screened and evaluated. A sample was contacted from various socio-economic status using structured questionnaire method. Majority of the respondents were males (70.0%), in 21-29 Age group (40.0%), unmarried (60%), with graduation (36.7%) and Post-Graduation (36.7%). Majority hailed from Nuclear family (63.3%), having 3-4 family members (50%), without children (70.0%) and family income of Rs, 50,000- 1,00,000 (53.3%).

Biochemical parameters revealed abnormal on triglycerides (40%), Fasting Plasma glucose (23.3%), LDL (60.0%) and with Low HDL (13.3%). Walking was found to be common physical activity. Life style habits were found among 25-30% with smoking and alcohol consumption. Incidence of metabolic syndrome based on risk factors as expressed were Lack of Physical activity (70.0%), over weight (50.0%) and poor diet (43.3%).

Incidence of metabolic syndrome established a significant association with age, education and type of family ($p < 0.05$) as compared to non-significant noticed with gender, marital status, children and family income ($p > 0.05$).

It can be concluded that the incidence of metabolic syndrome were more among males, younger group, unmarried, with higher education and nuclear type of family. This is due to lack of physical activities, life style habits and risk factors. Public health awareness programs need to be imparted to overcome this greater incidence which leads to social, psychological and health problems.

Keywords: Mets- Metabolic Syndrome, BMI – Body Mass Index.

INTRODUCTION

Metabolic syndrome, also expressed as Insulin Resistance Syndrome (IRS). Insulin resistance and abdominal obesity are two components of the syndrome and are integrally involved in its pathogenesis. Metabolic syndrome is also responsible for a tremendous burden of human disease and social costs and nutritional therapy is the key to both its prevention and limiting its progression to type 2 diabetes and CVD. The prevalence of metabolic syndrome is high among urban young adults in India, and it increased with increase in body mass index.

Component of risk factor in isolated form for increased BMI, smoking, and history of hypertension is an associated risk factor for metabolic syndrome. Although it is unclear whether metabolic syndrome screening in young Indians as a means to prevent adverse cardiovascular health outcomes is appropriate, healthy lifestyles should nevertheless be encouraged and young adults should be considered as an important sector for cardiovascular risk reduction programs (Manjunath., et al. 2014).

The prevalence rates of diabetes and Metabolic Syndrome among US Asian Indians are higher than reported in earlier, non-randomized surveys. These data provide a firm basis for future mechanistic and interventional studies (Misra., et al. 2010).

There is growing evidence that many patients who develop CVD or Type 2 DM have common antecedents of metabolic origin. The Endocrine Society has recognized the importance of identifying patients who are at metabolic risk so that efforts can be instituted to prevent both CVD and Type 2 DM.

Prevalence and trends of metabolic syndrome among adults in the Asia-pacific region: A systematic review shows despite differences in methodology, diagnostic criteria and age of subjects studied, the Asia-Pacific region is facing a significant epidemic of Metabolic Syndrome. In most countries nearly 1/5th of the adult population or more were affected by Metabolic Syndrome with a secular increase in prevalence. Strategies aimed at primary prevention are required to ameliorate a further increase in the epidemic and for the reduction of the morbidity and mortality associated with Metabolic Syndrome (Ranasinghe., et al. 2017)

Systematic review suggested a high prevalence of Metabolic Syndrome among subjects in Mainland China, indicating that Metabolic Syndrome is a serious public health problem. Therefore, more attention should be paid to the prevention and control of Metabolic Syndrome as mentioned in "Prevalence of metabolic syndrome in mainland china: a meta-analysis of published studies" (Ri Li.,et al, 2016).

The International Diabetes Federation (IDF) aimed to create a straightforward, clinically useful definition to identify individuals in any country worldwide at high risk of CVD and diabetes and to allow for comparative epidemiologic studies. This resulted in the IDF consensus definition of MetS in 2005. Central obesity, as defined as BMI > 30 kg/m² or if ≤ 30 kg/m² by ethnic specific waist circumference measurements) was a requisite for the syndrome. Additionally, the definition required the presence of two of the following four elements: triglycerides ≥ 150 mg/dL, HDL-c < 40 mg/dL in men or < 50 mg/dL in women, systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 85 mmHg, fasting glucose > 100 mg/dL (based on the 2003 ADA definition of IFG) including diabetes and those with a prior diagnosis of or treatment of any of these conditions.

AIM: To find out the Incidence of Metabolic Syndrome among Adults.

OBJECTIVES

- 1) To study the incidence of metabolic syndrome among adults.
- 2) To assess metabolic syndrome based on risk factors and biochemical parameters.

HYPOTHESIS: There is no incidence of metabolic syndrome among adults.

METHODOLOGY

The present study is conducted at one health care centre at Apollo hospital north Bangalore. Purposive random sampling method adopted for the study. Sample of 30 comprising of both male and female in age group of 21-40 years were selected. Respondents with Hyperthyroidism, Chronic kidney Disease, chronic liver disease were excluded. Inclusion criteria was based on IDF guidelines, respondents were screened with initial nutritional assessment with height, weight and waist circumference, blood pressure was screened and bio-chemical parameters for fasting blood glucose and lipid profile were tested to find out the incidence of Metabolic syndrome. Structured questionnaire was constructed, standardized and administered to respondents and obtained data on basic information and Incidence of Metabolic syndrome.

RESULTS AND DISCUSSIONS

The data collected for the present study was analyzed and presented in the following tables under different aspects considered.

Table-1 indicates the classification of respondents by Gender, Age, Marital status and Educational level. The results indicate that majority of respondents were Males (70.0%) as compared to females (30.0%). Further, higher respondents were noticed in the age group of 21-29 years (40.0%) followed by 30-34 years (36.7%) and 35-40 years (23.3%). Majority of respondents were found to be unmarried (60.0%) and married (40.0%). Regarding education the result shows that 36.6 per cent were graduates and postgraduate.

Table -1: Classification of Respondents by Gender, Age, Marital status and Education

Characteristics	Category	Respondents n=30	
		Number	Percent
Gender	Male	21	70.0
	Female	9	30.0
Age group (years)	21-29	12	40.0
	30-34	11	36.7
	35-40	7	23.3
Marital status	Married	12	40.0
	Unmarried	18	60.0
Educational level	IIT/Diploma	8	26.6
	Degree	11	36.7
	Post graduate	11	36.7
Total		30	100.0

Table -2: Respondents by Type of Family, Children, Family members and Family Income

Characteristics	Category	Respondents n=30	
		Number	Percent
Type of family	Nuclear	19	63.3
	Joint	11	36.7
Number of Children	Nil	21	70.0
	One	3	10.0
	Two	6	20.0
Family members	3-4	15	50.0
	5-6	13	43.3
	7+	2	6.7
Family income/month	< Rs.50,000	6	20.0
	Rs.50,001-1,00,000	16	53.3
	>Rs.1,00,000	8	26.7
Total		30	100.0

Respondents by Type of Family, Children, Family members and Family Income were depicted in Table-2. Majority of the respondents were from Nuclear family (63.3%) and 36.7 per cent were from joint family. Majority (70.0%) of respondents had no children due to unmarried status and 20.0% of respondents were noticed with two children. Regarding family size it was found that 50.0 per cent had 3-4 (50%) family members as compared to 5-6 members (43.3%). Income distribution indicated that majority (53.3%) were found in the range of Rs, 50,001- 1, 00,000 followed by > Rs.1,00,000.

Table-3: Classification of Respondents by Somatic status

Characteristics	Category	Respondents n=30	
		Number	Percent
Height (cms)	148-160	7	23.3
	161-169	11	36.7
	> 170	12	40.0
Weight (kgs)	51-65	14	46.6
	66-75	8	26.7
	> 75	8	26.7
Total		30	100.0

Classification of respondents based on somatic status is depicted in Table-3. Majority of the respondents (40.0%) were noticed with height above 170 cms followed by 161-169 cms (36.7%). Further, higher respondents (46.6%) had weight range of 51-65 kgs as compared to 26.7 per cent found with weight 66-75 kgs and above 75 kgs and weight 51-65 kgs (46.6%).

According, Tomoyuki Kawada., et al 2015 studied Waist Circumference, Visceral abdominal Fat Thickness and three components of metabolic Syndrome. They state that an advantage of waist circumference over visceral abdominal fat thickness as an obesity index for identifying all the three components of metabolic syndrome, although sex differences, in the study outcomes were found.

Figure-1: Classification of Respondents by Biochemical parameters

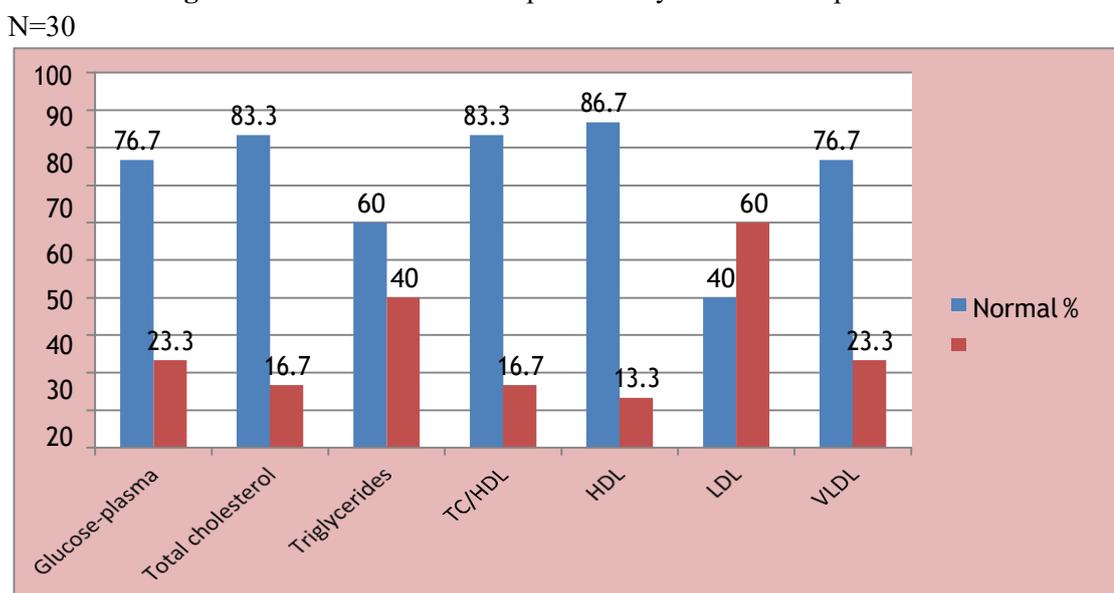


Figure 1 depicts the classification of respondents by bio chemical parameters. Majority of respondents (83.3%) were normal on Total cholesterol, TC/HDL (83.3%), HDL (86.7%) and VLDL (76.7%). Further, majority of respondent’s triglycerides were abnormal (40.0%), LDL (60.0%).

The hypertriglyceridemic-waist phenotype is associated with the Framingham risk score and subclinical atherosclerosis in Canadian Cree. It concludes that the hypertriglyceridemic-waist phenotype is prevalent in the Cree. Findings support studies on the utility of combining the

hypertriglyceridemic-waist with the Framingham Risk Score in the prediction of cardiovascular disease outcomes and in health screening and intervention programs among indigenous peoples (Poirier.J., et al, 2015)

Table-4: Classification of Respondents by Blood pressure parameters

Characteristics	Gender	Category	Respondents n=30	
			Number	Percent
Blood pressure	Female	Systolic \geq 130mm/Hg	3	33.3
		Diastolic \geq 85 mm/Hg		
		Systolic \leq 120 mm/Hg	6	66.7
		Diastolic \leq 80 mm/Hg		
	Male	Systolic \geq 130mm/Hg	16	76.2
		Diastolic \geq 85 mm/Hg		
		Systolic \leq 120 mm/Hg	5	23.8
		Diastolic \leq 80 mm/Hg		
Total			30	100

Classification of respondents by blood pressure is depicted in Table – 4. Majority of Male respondents (76.2%) had higher systolic and diastolic pressure. Whereas with female respondents were 33.3% in that category. This shows male respondents had higher blood pressure than the normal level which fall into metabolic syndrome criteria.

Table-5: Classification of Respondents by Physical activities

No.	Physical activities	Respondents (%) n=30		
		Regularly	Occasionally	Never
1	Walking	53.3	16.7	30.0
2	Cycling	6.7	3.3	90.0
3	Aerobics	6.7	3.3	90.0
4	Yoga	16.7	3.3	80.0
5	Swimming	3.3	20.0	76.7
6	Sports	0.0	6.7	93.3

Classification of respondents by physical activities was shown in Table-5. Majority of respondents were involved in walking (53.3%) and 16.0 per cent were involved in yoga. Other physical activities were very negligible among the respondents.

Figure-2: Classification of Respondents by Life Style Habits

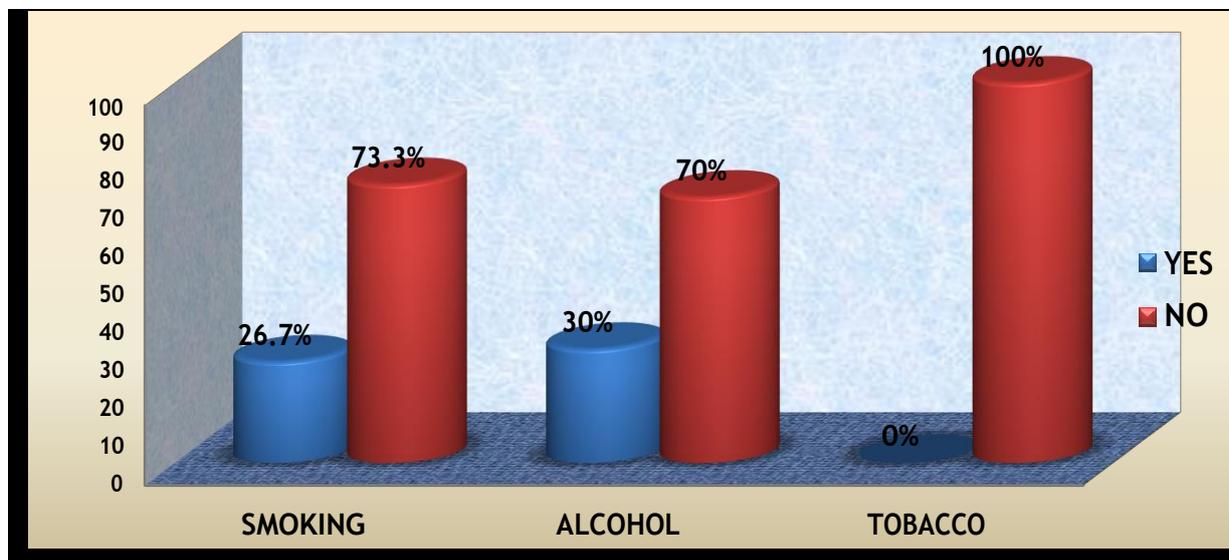


Figure-2 depicts the classification of respondents based on their life style habits. The result indicates that 73 per cent of respondents had smoking habit and 30.0 per cent had the habit of consuming alcohol.

Table-7: Classification of Respondents by Risk factors

No.	Risk factors	Respondents n=30			
		Yes		No	
		N	%	N	%
1	Over weight	15	50.0	15	50.0
2	Poor diet	13	43.3	17	56.7
3	Lack of physical activity	21	70.0	9	30.0
4	High cholesterol	3	10.0	27	90.0
5	Blurred vision	2	6.7	28	93.3
6	Increased fatigue	4	13.3	26	86.7
7	Doctor warning	3	10.0	27	90.0
8	Frequent urination	1	3.3	29	96.7

Incidence of metabolic syndrome based on risk factors is seen in Table-7. Majority of respondents Lack of Physical activity (70.0%) followed by over weight (50.0%) and poor diet (43.3%).

Dietary patterns associated with metabolic syndrome, socio-demographic and lifestyle factors in young adults. The Bogalusa Heart Study states that Dietary patterns are important in identifying relationships with occurrence of diseases such as the MetS. Specifically, a prudent balanced dietary pattern may be helpful in preventing MetS in this sample of BHS young adults. More studies are warranted to confirm these findings in other populations. Nonetheless, nutrition intervention programmes for young adults to promote healthy dietary and lifestyle habits tailored-

based on their SES, demographic and lifestyle characteristics may be beneficial. (Deshmukh – Taskar., et al – 2009)

“Assessment and Screening of the Risk Factors in Metabolic Syndrome”, a cross-sectional study was conducted to assess age,gender, social status, employment, education, family history, physical activity, dietary habits, alcohol, sleep, body mass index and stress as determinants of MetS. Common concerns of female gender were increasing age and BMI, sedentary lifestyle, stress and positive family history. These should be considered for early identification and appropriate intervention to fight the growing MetS epidemic.(Jaspinder Kaur, 2014)

Incidence of metabolic syndrome were found in association with selected variables viz., male (42.9%), 30-34 years of age (63.6%) and age group between 30-34(63.6%) and 35-40 age group (57.1%), unmarried (44.4%) and post graduates (72.7%). Further, incidence of Metabolic Syndrome were noticed more among Nuclear family (57.9%), family with one child (66.7%), 3-4 family members (46.7%) and family income of Rs. 50,001- 1,00,000 (50.0%). The association between Incidence of metabolic syndrome with age group, educational level and type of family were found to be significant (p<0.05). However, the association was found non-significant with gender, marital status, no. of children, family members and family income (p>0.05).

“Prevalence and determinants of the Metabolic syndrome among Tunisian adults: results of the transition and health impact in North Africa (TAHINA) project, - a survey” states that the prevalence of Metabolic Syndrome is high in Both Men and Women in Tunisia. MetS is not only concern for the urban population, but is also a matter of debate in rural areas. To reduce the risk of MetS, a multi-dimensional effort by individuals, society and the national health program is necessary (Hanen Belfki., and et al. 2012).

Table-8: Association between Selected Variables and Incidence of Syndrome

Selected Variables	Category	Sample N=30	Incidence of Syndrome				χ^2 Value	P Value
			No		Yes			
			N	%	N	%		
Gender	Male	21	12	57.1	9	42.9	0.24 NS	P>0.05 (3.841)
	Female	9	6	66.7	3	33.3		
Age Group (years)	21-29	12	11	91.7	1	8.3	8.43*	P<0.05 (5.991)
	30-34	11	4	36.4	7	63.6		
	35-40	7	3	45.9	4	57.1		
Marital status	Married	12	8	66.7	4	33.3	0.37 NS	P>0.05 (3.841)
	Unmarried	18	10	55.6	8	44.4		
Educational level	IIT/Diploma	8	7	87.5	1	12.5	8.17*	P<0.05 (5.991)
	Degree	11	8	72.7	3	27.3		
	Post graduate	11	3	27.3	8	72.7		
Type of Family	Nuclear	19	8	42.1	11	57.9	6.91*	P<0.05 (3.841)
	Joint	11	10	90.9	1	9.1		
Number of Children	No	21	13	61.9	8	38.1	1.03 NS	P>0.05 (5.991)
	One	3	1	33.3	2	66.7		
	Two	6	4	66.7	2	33.3		
Family Members	3-4	15	8	53.3	7	46.7	1.62 NS	P>0.05 (5.991)
	5-6	13	8	61.5	5	38.5		
	7+	2	2	100.0	0	0.0		
Family	< Rs.50,000	6	5	83.3	1	16.7	2.05	P>0.05

Income/month	Rs.50,001-1,00,000	16	8	50.0	8	50.0	NS	(5.991)
	>Rs.1,00,000	8	5	62.5	3	37.5		
Combined		30	18	60.0	12	40.0		

* Significant at 5% Level, NS: Non-significant

Note: Figures in the parenthesis indicate Table value

CONCLUSION

It can be concluded that the incidence of metabolic syndrome were more among males, younger group, unmarried, higher education and nuclear family. Involvement of physical activities was found to be very less except walking. Bio-chemical parameter was found slightly abnormal with high triglycerides, LDL and Plasma- Glucose among respondents. This is due to lack of physical activities, abnormal life style habits and risk factors which leads to social, psychological and health problems. Our Nation needs healthy and productive individuals to build New India therefore Public health awareness programs need to be imparted to overcome this greater incidence of Metabolic Syndrome. The relevant knowledge and capacity building to Prevent and manage Metabolic syndrome, Home Scientist, nutritionist, Dietitians and health care workers play vital role as catalyst to reach Sustainable Development Goal- 3 (i.e, Good health and well-being).

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BODY MASS INDEX (BMI) ASSESSMENT OF COLLEGE GOING ADOLESCENT GIRLS IN BHOPAL CITY

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ABSTRACT

With India, projected to be the youngest nation in coming decade, health of its youth becomes even more important. Youth is the true wealth of any nation. The youth are critical for a nation's continued economic development and demographic evolution. The present study was planned with an objective to assess health status of female students in the autonomous colleges of Bhopal city. BMI was chosen as indicating parameter. Majority of subjects belonged to general category (56.6%); had private schooling (68.3%); belonged to nuclear families (71.1%) and had a family income of Rs.10-30,000/month (46.1%). Total respondents under study had mean height of 157.47±12.60 cm, mean body weight 48.52±7.51 kg, mean BMI 19.44 ±2.92 kg/m² and mean body fat per cent 24.61±5.46. Of the total 180 subjects; 42.2, 52.8, 3.3 and 1.7 per cent were underweight, normal, overweight and obese respectively.

Keywords: Adults, Anthropometrics, BMI, India, Socio economic status.

INTRODUCTION

Overweight and obesity are the result of "caloric imbalance"- too few calories expended for the amount of calories consumed - and are affected by various genetic, behavioral, and environmental factors. Obesity has both, immediate and long-term, effects on health and well-being. Obese youth are more likely to have risk factors for cardiovascular disease, such as high cholesterol or high blood pressure. In a population-based sample of 12 to 17 year, 70% of obese youth had at least one risk factor for cardiovascular disease.

Obese adolescents are more likely to have prediabetes, a condition in which blood glucose levels indicate a high risk for development of diabetes. Adolescents who are obese are at greater risk of bone and joint problems, sleep apnea, as well as social and psychological problems such as stigmatization and poor self-esteem. They are likely to be obese as adults and are therefore more at risk of adult health problems such as heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis. Healthy lifestyle habits, including healthy eating and physical activity, can lower the risk of becoming obese and developing related diseases.

Youth is the true wealth of any nation. The youth are critical for a nation's continued economic development and demographic evolution. The youth population, which typically constitutes the entering cohort in the country's labour force, is expected to bring in freshly learned and updated skills that will help renew and improve the country's stock of human capital. Education, employment, and health are all key elements of youth empowerment. India's population trend shows that people in the age group 15-65 constitute the majority, thereby reducing the size of the dependent population. It is projected that by 2025 the dependency ratio will fall to 48 per

cent, from the current 60 per cent. With India, projected to be “the youngest nation” in coming decade, health of its youth becomes even more important. Government of India has been making several efforts in developing health and population policies. However, there are several problems in the implementation of appropriate interventions due to poverty, illiteracy and gender discrimination.

The changes in diet and physical activity have resulted largely from epidemiological transition that is underway in most developing countries including India. The main driving forces of these epidemiological shifts are a globalized world, rapid and uneven urbanization, demographic shifts and inter- and intra-country migrations – all of which result in alterations in dietary practices (a shift from high fiber, vegetable and fruit-rich diets to diets rich in saturated fats, trans fats and high salt-containing processed foods) and a decrease in physical activities). Where scholars have tried to rigorously link dietary and activity changes with body composition changes among adults, the results have been persuasive. They have repeatedly shown in longitudinal studies of these relationships among children and adults that the dietary and activity patterns affect Body Mass Index [1, 2]. Also they have shown that these changes are dynamic and there appears a shift to be emerging toward greater overweight among the poor in some countries [3]. The income–dietary fat intake changes noted for developing countries indicate that they are in the early stages of shift toward an inverse income–BMI relationship [4, 5].

Most scientific focus today is towards the vulnerable groups mainly school going children, adolescent subjects and pregnant/lactating mothers. There is a dearth of data when it comes to the age group of 18-21, the young adults. With the new found freedom from parent’s dictate, these young minds enter the college with false perception of adult maturity. Coming out of their parent’s control, these young adults are exposed to new friends and new environment which includes increased pocket money and access to all kind of media. Food habits formed during school years under the supervision of parents are transformed under peer pressure. The youth studying in colleges today shall be the main workforce for coming two to three decades. Their present nutritional status might affect their work efficiency of tomorrow. Therefore it becomes imperative to study their nutritional status.

As with other chronic diseases, obesity results from an interaction between an individual’s genetic predisposition to weight gain and environmental influences. Gene discovery in the field of weight regulation and obesity has identified several major single-gene effects resulting in severe and early-onset obesity as well as many more minor genes with more variable effects on weight and fat distribution, including age-of-onset and severity. However, currently known major and minor genes explain only a small portion of body weight variations in the population (15).

Generally, a person with body mass index (BMI) above 30 Kg/m² is considered obese. There is a growing concern about the increasing prevalence of childhood obesity worldwide. The aim of this study is to examine the relationship between obesity and socioeconomic status and education of parents as well as to examine the association between obesity and fast food intake. With above facts in mind, the present study was planned with the objective to assess health status of female students in colleges of Bhopal city. BMI was chosen as indicating parameter.

OBJECTIVES

- To measure height, Weight ,waist ,hip of college students
- To Calculate BMI ,WHR and body fat of college students
- To assess the health status of college students based on BMI

HYPOTHESIS

Assumption: It is assumed that the health status of college students is not good nowadays

H1-The BMI of maximum students will be found to be on higher side due to obesity.

Limitation: The limitation of this study was that it was only focused on adolescent girl students others were not included in the study.

METHODOLOGY

Keeping in view the objectives of study, questionnaire was developed and pretested. Appropriate changes were made in consultation with Statistician and subject experts. A total of 180 subjects were studied from three colleges of Bhopal. Maharani Laxmibai college (-MC), Sarojini Naidu College (-NC), Geetanjali college (GC). These colleges were selected purposively for the ease of access. Students from these colleges who volunteered for the study were chosen as subjects. College students in the age group 18-21 were assessed for their body weight, BMI and body fat per cent using Digital weighing scale (Omron HN 283), BMI and body fat monitor (Omron HBF 306, based on hand to hand BIA method) respectively. Height was measured in cm using the standard height measuring rod. The software SPSS 16.0 was used for statistical analysis.

FINDINGS AND DISCUSSION

The result have been assessed on the following given criteria based on the objectives of the study.

Socio-demographic profile

In the present study, overall 91 out of 180 respondents (56.6%) belonged to general category while, 49 respondents (27.2%) were from backward caste. At the same time 29 respondents (16.1%) were from scheduled caste and 11 respondents (6.1%) were from other backward caste. Of the total, majority of respondents (83.89 per cent) were day scholars (Table 1.). Majority of respondents (68.3%) had private schooling, while 31.7% respondents were from Government schools. Most of subjects (55%) belonged to the small cities; 38.3 per cent belonged to the rural areas and 6.7 per cent of the respondents belonged to the metropolitan areas. Of the total subjects, 95.6 per cent were Hindu, 3.9 per cent were Muslim and 0.6 per cent were Sikh. Data highlights that majority of the respondents (53.9 %) were religiously liberal, 37.8 per cent were strictly religious and 8.3 per cent were atheist. (Table-1)

Table 1: Socio-demographic profile of university students

Sr. No.	Characteristics	Colleges			Total 180
		MC(n=60)	NC (n=60)	GC(n=60)	
1	Caste				
	General	28 (46.7)	28(46.7)	35(58.3)	91(50.6)
	SC	11 (18.3)	10(16.7)	8(13.3)	29(16.1)
	BC	16 (26.7)	17(28.3)	16(26.7)	49(27.2)
	OBC	5 (8.3)	5(8.3)	1(1.7)	11(6.1)
2	Commutation				
	Day scholar	20(33.33)	3(5.0)	6(10.0)	29 (16.11)
	Hosteler	40(66.67)	57(95.0)	54(90.0)	151(83.89)
3	Schooling				
	Private school	40(66.7)	46(76.7)	37(61.7)	123(68.3)
	Govt school	20(33.3)	14(23.3)	23(38.3)	57(31.7)
4	Permanent residence				
	Rural	27(45.0)	19(31.7)	23(38.3)	69(38.3)
	Small City	28(46.7)	36(60.0)	35(58.3)	99(55.0)
	Metropolitan	5(8.3)	5 (8.3)	2(3.3)	12(6.7)
5	Religion				
	Hindu	56(93.3)	58(96.7)	58(96.7)	172(95.6)
	Muslim	3(5.0)	2(3.3)	2(3.3)	7(3.9)
	Christian	1(1.7)	-	-	1(0.6)
	Sikh	-	-	-	-
6	Religiousity				
	Strictly religious	19(31.7)	23(38.3)	26(43.3)	68(37.8)
	Liberal	34(56.7)	31(51.7)	32(53.3)	97(53.9)
	Etheist	7(11.6)	6(10.0)	2(3.4)	15(8.3)
7	Family Type				
	Nuclear	43(71.7)	40(66.7)	45(75.0)	128(71.1)
	Joint	17(28.3)	20(33.3)	15(25.0)	52(28.9)
8	Monthly Family Income(Rs.)				
	Below 10,000	23(38.3)	13(21.7)	12(20.0)	48(26.7)
	10-30,000	22(36.7)	30(50.0)	31(51.7)	83(46.1)
	30-60000	11(18.3)	9(15.0)	15(25.0)	35(19.4)
	60-1L	2(3.3)	4(6.7)	1(1.7)	7(3.9)
	Above 1L	2(3.3)	4(6.7)	1(1.7)	7(3.9)

Figures in parenthesis indicate per cent of respective characteristic (column wise).

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Results depict that majority of subjects (71.1%) belonged to nuclear families and 28.9 per cent of subjects belonged to joint families. Overall, 26.7 per cent respondents were having family income below Rs.10,000/month followed by 46.1 per cent respondents with a family income of Rs.10-30,000/month, 19.4 per cent respondents with a family income of Rs.30- 60,000/month. Equal percentages (3.9 per cent each) of respondents had a family income between Rs.60, 000-1 Lac/month and above Rs. 1 Lac/month respectively.

Mean anthropometric measurements of students

The data on anthropometric measurements of college students has been presented in Table 2. Mean height of total respondents under study was 157.47 ± 12.60 cm while that of respondents from MC, NC and GC was 156.93 ± 6.90 , 158.34 ± 5.36 and 157.12 ± 20.10 cm respectively. Mean body weight of all the subjects was 48.52 ± 7.51 kg. College wise comparison showed that the mean weight of MC respondents was 47.10 ± 7.26 and that of NC and GC was 49.17 ± 8.52 and 49.30 ± 6.54 respectively.

The mean BMI of respondents was 19.44 ± 2.92 kg/m² and mean body fat per cent was 24.61 ± 5.46 . The mean BMI of MC respondents was found to be 19.26 ± 2.94 while that of NC and GC was 19.31 ± 3.12 and 19.76 ± 2.71 respectively. Respective mean body fat per cent of MC respondents was (24.15 ± 4.76); and that of NC and GC was (24.7 ± 6.12) and (24.99 ± 5.47). The mean waist-to-hip ratio of total respondents was 0.85 ± 0.05 .

There were no significant ($p \leq 0.05$) differences in mean anthropometric measurements of respondents from different colleges.

Table 2: Mean anthropometric measurements of college students

Colleges	Body Weight (Kg)	Height (cm)	BMI (Kg/m ²)	Body fat (%)	Waist/Hip
MC (n=60)	47.10 ± 7.26	156.93 ± 6.90	19.26 ± 2.94	24.15 ± 4.76	0.85 ± 0.05
NC (n=60)	49.17 ± 8.52	158.34 ± 5.36	19.31 ± 3.12	24.7 ± 6.12	0.86 ± 0.05
GC(n=60)	49.30 ± 6.54	157.12 ± 20.10	19.76 ± 2.71	24.99 ± 5.47	0.85 ± 0.04
Total (n=180)	48.52 ± 7.51	157.47 ± 12.60	19.44 ± 2.92	24.61 ± 5.46	0.85 ± 0.05
z-test	NS	NS	NS	NS	NS

Values are mean \pm standard deviation.

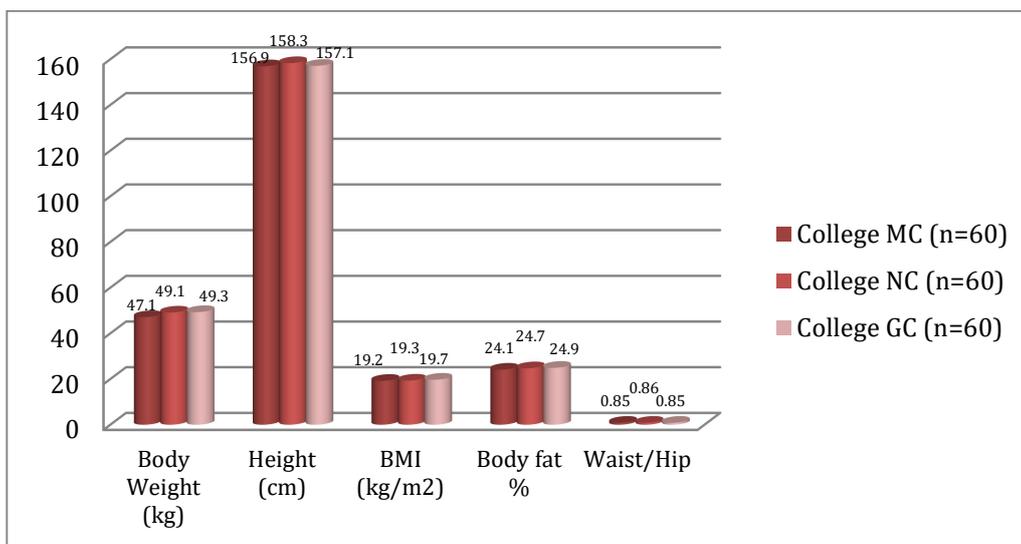


Figure 1: Mean Anthropometric measurements of college students

Health status of subjects based on BMI

Based on BMI, subjects were classified as underweight, normal, overweight and obese [15]. Data shows that 42.2, 52.8, 3.3 and 1.7 per cent were underweight, normal, overweight and obese (Table 3)

When compared university wise 50, 45, 1.7 and 3.3 per cent respectively of respondents were underweight, normal, overweight and obese in MC, while 40, 55, 3.3 and 1.7 per cent of respondents fell in the categories of underweight, normal, overweight and obese in NC and there were 36.7, 58.3 and 5 per cent underweight, normal and overweight subjects in GC while none fell in the category of obese.

Table 3: Health status of College students based on BMI

Health Status	Colleges			Total (n=180)
	MC (n=60)	NC (n=60)	GC (n=60)	
Underweight (BMI≤18.4)	30 (50.0)	24(40.0)	22(36.7)	76 (42.2)
Normal weight (BMI18.5-24.9)	27 (45.0)	33(55.0)	35(58.3)	95 (52.8)
Overweight (BMI25- 29.9)	1 (1.7)	2(3.3)	3(5.0)	6 (3.3)
Obese (BMI ≥30)	2 (3.3)	1(1.7)	-	3 (1.7)

Figures in parenthesis indicate percent of respective Colleges (column wise).

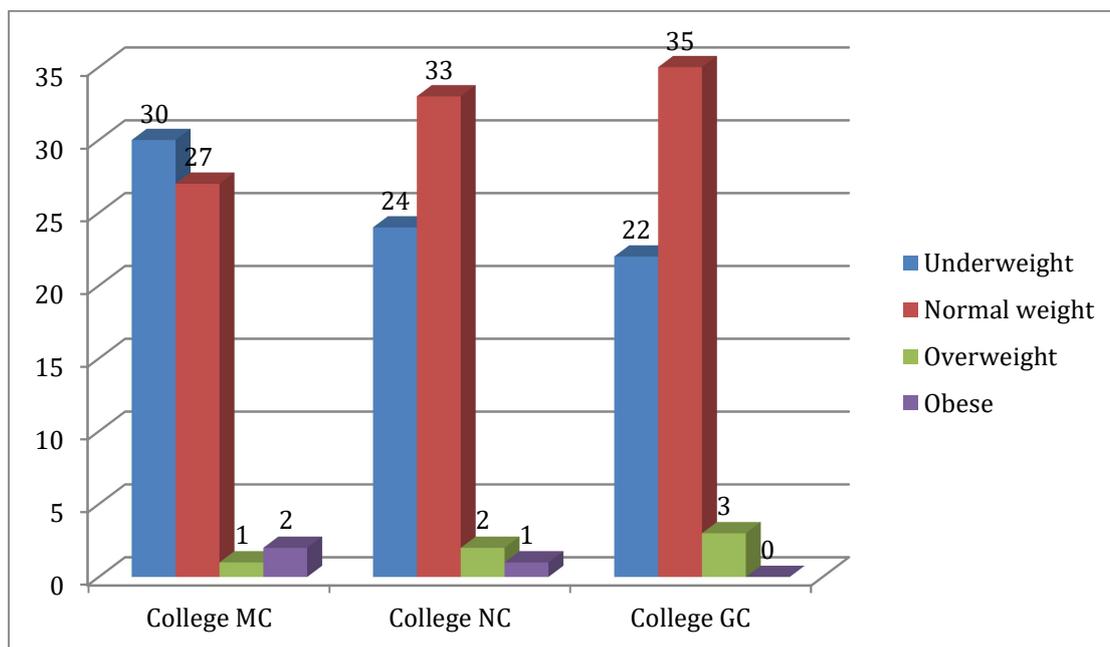


Figure 2: Health status of college students based on BMI

Mean anthropometric measurements of subjects in different health categories

Table 4 presents mean anthropometric measurements of subjects belonging to different health categories based on BMI. One way ANOVA was used to study the inter category differences. For the purpose of ANOVA, overweight and obese categories were combined together due to lesser number of respondents in these categories.

The body weight of subjects in different health categories were significantly ($p \leq 0.05$) different from each other. The mean weight of respondents varied from 71.67 ± 15.28 kg (obese) to 43.75 ± 4.42 kg (underweight). The mean height of respondents varied from 170.83 ± 12.83 cm (obese) to 158.53 ± 7.47 cm (normal). There was no statistically significant ($p \leq 0.05$) difference in height among different groups. As expected BMI of all four groups varied significantly ($p \leq 0.05$) among themselves, it varied from 30.27 ± 0.25 kg/m² for obese to 17.09 ± 1.26 kg/m² for underweight category. The body fat per cent of all four groups also varied significantly among them. It varied from 34.93 ± 8.50 for obese group to 20.33 ± 3.24 for underweight. Analysis depicted significant ($p \leq 0.05$) difference among waist to hip ratio of underweight and overweight group. However, there were no significant differences in waist to hip ratio of underweight and normal weight categories.

Table 4: Mean anthropometric measurements of College students in different weight categories

Characteristic	Underweight (BMI≤18.4) (n=76)	Normal weight (BMI18.5-24.9) (n=95)	Overweight (BMI25- 29.9) (n=6)	Obese (BMI ≥30) (n=3)
Body Weight (Kg)	43.75±4.42	50.66±5.20	63.50±10.05	71.67±15.28
Height (cm)	158.53±7.47	156.19±15.49	157.50±10.75	170.83±12.83
BMI (Kg/m ²)	17.09±1.26	20.49±1.34	27.10±1.48	30.27±0.25
Body fat %	20.33±3.24	27.11±3.95	34.28±3.78	34.93±8.50
Waist/Hip	0.85±0.05	0.85±0.04	0.90±0.04	0.91±0.06

Values are mean ± standard deviation.

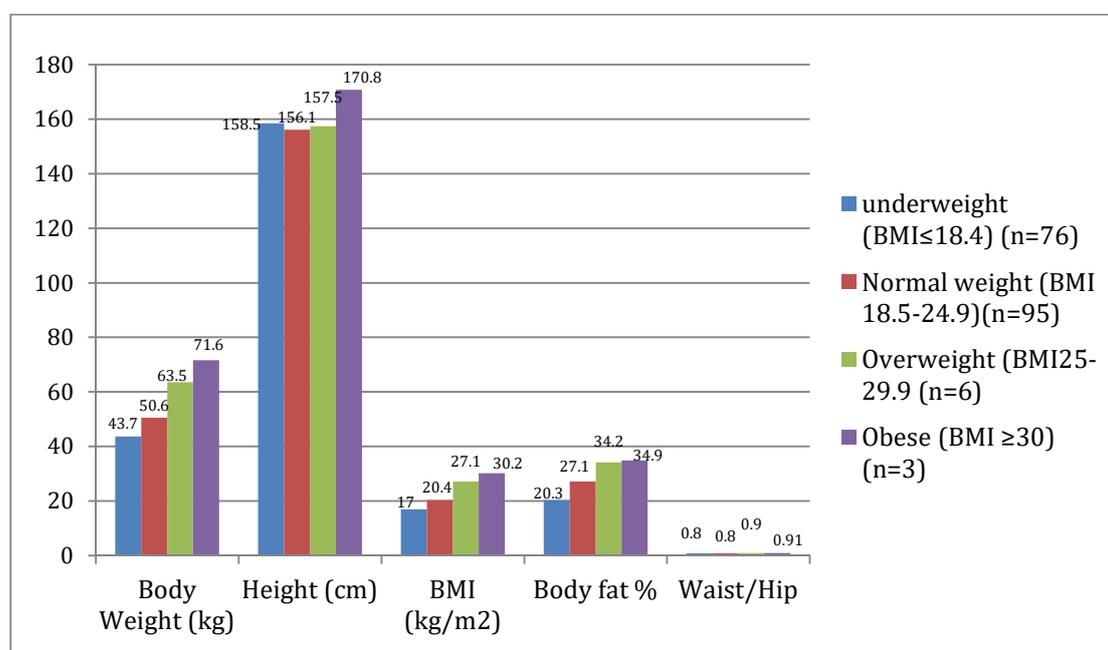


Figure 3: Mean Anthropometric measurements of college students in different weight categories

DISCUSSION

In India, the issue of overweight/obesity was not even addressed during National Family Health Survey-1 in 1992-1993. In 1998-99, NFHS-2 depicted 16.6 per cent women in Haryana as underweight and 25.9 per cent as overweight/ obese [6]. As per NFHS-3 in 2005-2006, Haryana had 27.8 per cent of its women and 26.8 per cent male below normal weight [7]. At the same time the survey indicated prevalence of overweight/obesity in 21 per cent of females and 14.4 per cent males. The survey included female subjects in the age 15-49 and male subjects in the age 15-54. Subramanian *et al.*, [8] used the NFHS data and calculated a ratio of the number of underweight women to overweight women in India. They concluded that although the ratio of underweight to

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overweight women decreased from 3.3 in 1998–1999 to 2.2 in 2005–2006, there were still considerably more underweight women than overweight women.

Excessive body weight is associated with various diseases and conditions, particularly cardiovascular diseases, diabetes mellitus type 2, obstructive sleep apnea, certain types of cancer, osteoarthritis,^[12] and asthma.^[12] As a result, obesity has been found to reduce life expectancy.^[12]

Chatwal *et al.* [8] determined the prevalence of obesity in preadolescent and adolescent children of northern India. Using WHO references, overall prevalence of obesity and overweight was 11.1% and 14.2% respectively. The prevalence of obesity as well as overweight was higher in boys as compared to girls (12.4% vs 9.9%, 15.7% vs 12.9%). Sindhu [10] indicated existence of dual problem in young adults with 23.01 per cent of total subjects in underweight and 15.25 per cent in overweight/obese categories. Subjects under present study were also a mix of underweight (42.2 per cent) and overweight/obese (5.0 per cent) with only 52.8 per cent subjects having normal weight.

The recognition that being overweight or obese is a chronic disease and not simply due to poor self-control or a lack of will power comes from the past 70 years of research that has been steadily gaining insight into the physiology that governs body weight (homeostatic mechanisms involved in sensing and adapting to changes in the body's internal metabolism, environmental food availability, and activity levels so as to maintain body weight and fat content stability), the pathophysiology that leads to unwanted weight gain maintenance, and the roles that excess weight and fat maldistribution play in contributing to chronic diseases such as diabetes, dyslipidemia, heart disease, non-alcoholic fatty liver disease, and many others (13, 14)

Freedman [10] reported that the accuracy of BMI varies according to the degree of body fatness. Among relatively fat subjects, BMI is a good indicator of excess adiposity, but differences in the BMIs of relatively thin subjects can be largely due to fat-free mass. He found that a high BMI-for-age has a moderately high (70%–80%) sensitivity and positive predictive value, along with a high specificity (95%). Sindhu [9] also reported that body fat per cent of young adults correlated well with BMI categories but waist to hip ratio was contained within normal limits in all BMI based weight categories. A meta-analysis of per cent body fat association with BMI in Asian populations indicated a different relationship among Asians living in different countries [14].

Such anthropometric data on young Asians would be crucial for planning, prevention and treatment of various obesity-related metabolic diseases in the Asian Indian population.

CONCLUSIONS

The prevalence of obesity is changing and increasing yearly and is attributed to the nutritional risk factors for the college going adolescents. Nevertheless parents' occupations were not significantly correlated to their children's body weight. It is interesting to know that most of the overweight or obese girls belonged to the families of high income. Parents must take necessary precautions for the diet of their children and should adopt healthy life style. The government and

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media should also play their role in creating awareness for healthy meals and the risk factors associated with obesity.

The results indicate emergence of overweight/obesity in a population with more than 40 per cent underweight subjects. There is a need to conduct wider, nationally representative studies and also create awareness regarding the emerging trend. Such studies would be instrumental in policy formulation for handling the malnutrition.

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SOCIAL NETWORKING AND OPPOSITE SEX INTERACTIONS AMONG ADOLESCENTS OF VADODARA AND DELHI

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ABSTRACT

Internet use is more prominent in today's world when it is compared with the past years. Youth of our country are heaviest users of different social networking sites among all the other age groups. Every individual, depending on their life stage have different needs, so they use the technologies in different ways. Adolescents spend most of their time on social sites. The purpose of this research was to identify the reasons behind the use of different social sites, the nature of relationships that adolescents form online, their different perspectives on seriousness of these relationships through social media. A qualitative method was adopted in which data was collected through open ended interviews. The sample size was 100 comprising 60 participants from Vadodara and 40 participants from Delhi, equally divided across gender. The study found that, many adolescents were accessing the sites for entertainment purposes accompanied by building connections. Further, the study found that relationships that were formed online were perceived to lack gravitas. Most adolescent's knowledge about privacy measures is inadequate. The study further unfolds many different aspects related to privacy, romantic relationships and conflicts.

Keywords - Social Media, Relationships, Internet, Online dating.

INTRODUCTION

“Good-looking individuals are treated better than homely ones in virtually every social situation, from dating to trial by jury. If everyday experience hasn't convinced you of this, there's research that will.” - - Martha Beck

Today social media is very popular among the adolescents and life is more about the inter-face. Mainly, teens are heavy users of social media as they believe in building of new connections and relations. They increase their network through various sources like Facebook, Instagram, sharing of videos, emails, forming virtual identity etc. In social networking site the user creates a unique profile to present him/her by adding personnel details such as pictures, educational status, their dwell etc. Mainly, to form network adolescents use internet as the prime venue. Social interaction has become the primary use of home computers (Moore, 2000). The network formed on social media can be used in two ways such as, revealing social identity or on other hand for disguising the real identity. Adolescents, have these days advanced their social skills, and now they may consider the internet as just another platform to get socialize with peers.

Dating sites offer a distinctive social environment that in many respects differs from other online platforms. Many times, peers also influence the formation of this network which further affects the

development of relationship that adolescents have with their parents. Meanwhile, parents are also enhancing their abilities so that they can monitor their child's online activity, which nevertheless is a tough job for the parents (Subrahmanyam & Greenfield, 2008). The present study has focused on the relationships that are formed through internet with the use of various social networking sites and the nature of these relationships.

REVIEW OF LITERATURE

"The Internet is the first thing that humanity has built that humanity doesn't understand, the largest experiment in anarchy that we have ever had." - Eric Schmidt

In today's world, finding a romantic partner, sometimes, can be challenging, but due to availability of resources these challenges have now changed, and here internet plays a vital role (Finkel, et.al, 2012). To find a mate; individuals have numerous sites available according to their needs. Since, the market is now consumer oriented the sites are extremely user friendly (Finkel, et. al, 2012). Apart from social networking sites viz., Facebook, Instagram, there are many dating applications that are now available such as Tinder, Badoo which specifically finds matches for an individual according to the needs (Wang & Wang, 2010).

Internet, being a virtual world, is famous for the formation of frivolous relationship that later on affects the adolescent's lives in many ways (Wang & Wang, 2010). There are distractions due to these relationships and also cultivating and enduring an online relationship can affect other relationships. For some adolescents, their world revolves around internet, to the extent, that they get addicted and part themselves from the realistic world.

Romantic relationship and commitment among adolescents

Romantic relationships provide youth with platform where they can explore themselves such as, what draws their attention, how they can draw others attention towards themselves, what are the different qualities that they want in their 'life partner'. Usually, the phenomena of romantic relationships is related with the Western civilization, and the concept of arrange marriages are related to the East, specifically India. Romantic love is affected by many environmental influences such as prosperity, gender equality, education and technical growth. Today, the youth have better opportunities to choose their perfect partners according to their preferences (Gala & Kapadia, 2014).

Shifts in internet usage from negative to positive

With time and advancement of technology the effects of usage of internet has now shifted from 'negatives' to the 'positives'. Because, adolescents now predominantly use the internet to restore their friendships which they might have constructed years ago, the condition for negative effects of the internet on social connectedness and well-being still exists. Therefore, that most recent internet studies have demonstrated that with the usage of internet adolescents' online communication stimulates, rather than decline, social connectedness and well-being (Valkenburg & Peter, 2009).

Self- presentation during online dating

In online dating the sites provide an opportunity to the user to present themselves the way they want to in front of the potential partners. The members on dating sites are very well aware about the advantages that they are going to have in future with self-presentation as, it provide them with the opportunity to interact with different potential partners. Studies show that physical appearance is an important aspect when it comes to presenting self.

The past studies stated that the time spent over online minimizes the face to face interactions, which can also lead to depression. The past negative findings have now been overruled. There have been some arguments on the fact that face to face relationships are better than the virtual ones. However, relationships can start virtually and then can move to face to face interaction (Rosenfeld & Thomas, 2012). Teenage is the time during which adolescents discovers many emotions that effect their lives. They build up new relations and bonds with the people.

The next section of the study is in support of above mentioned aspects.

Conceptual framework

With technical revolution, now, youth has smooth access to technology, which simultaneously increases the use of free internet, mobile technology and usage of social networking sites. The various social applications facilitate in networking and formation of relationships, which enhance the access to variety of people. The net-work is now more enhanced and not limited to neighborhood. On social networking sites we have different privacy options as we have passwords for each profile; also we get updated about the world. Sometimes, relationship formed through online platform can later develop to face to face interactions and further end up into committed relationships. However, the tendency of self- disclosure which could be indiscriminate that means, sometimes people post details about themselves which should not be posted such as location, addresses. Further, there can be breach of privacy like fake accounts and frivolous relationship that are time pass and feign.

OBJECTIVES OF THE STUDY

- To recognize various objectives for which people use internet.
- To understand the nature of relationship that they form through social networking sites.
- To examine the level of sincerity of these relationships

METHODOLOGY

The section includes information about the tool and sampling procedure.

The present study compares the pattern of usage of social media of Vadodara and Delhi as a platform to communicate. The research has focused to find out any gender differences and also the aim of the study was to figure out any comparison on the basis of cities that is how the youth was applying this mode of communication to interact in Delhi and Vadodara.

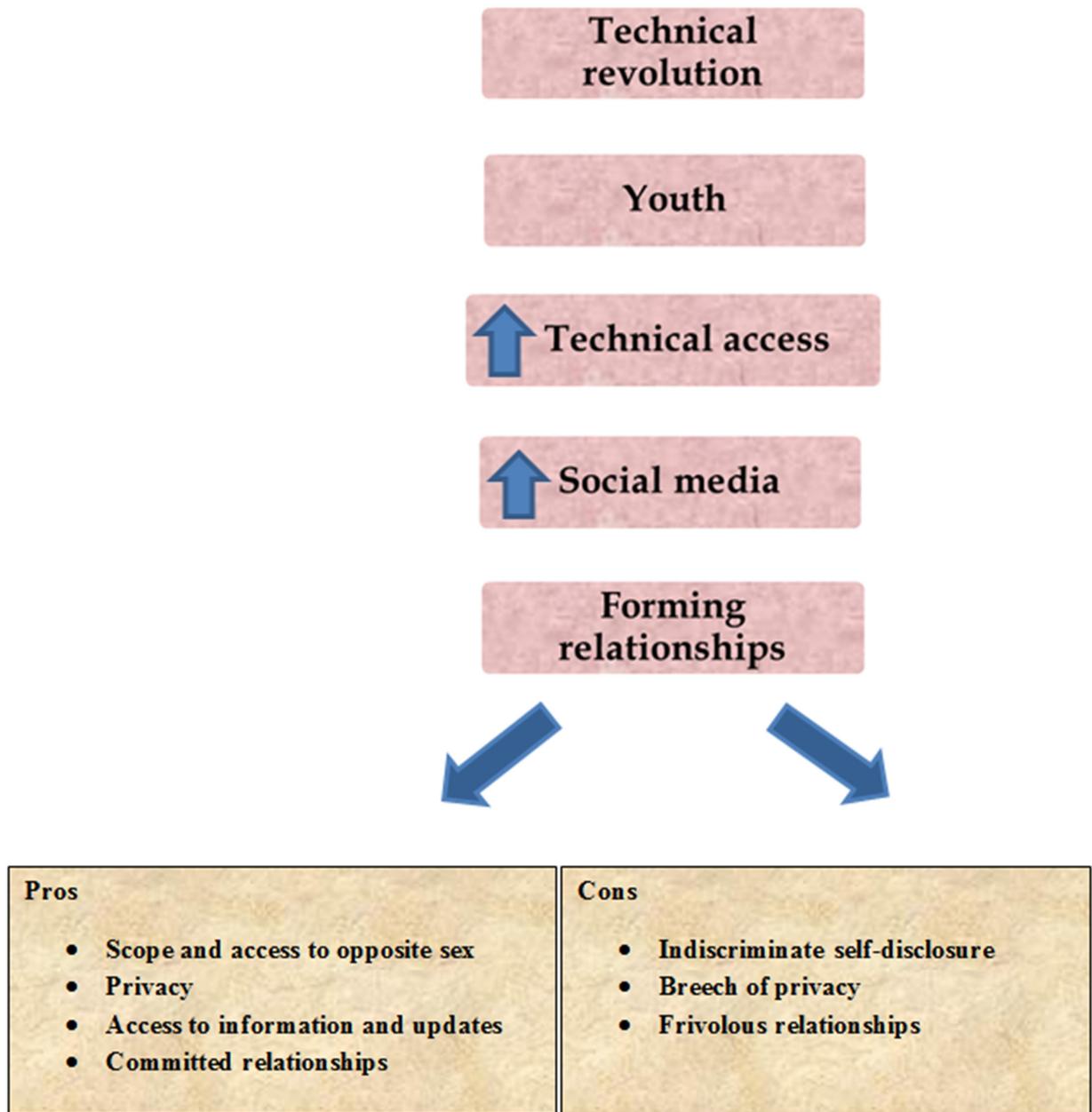


Figure 1: Conceptual framework

Tool for data collection: An open ended interview schedule was developed by the researchers. The domains covered in the tool were:

- General information about internet use
- Initiating opposite sex friendships
- Relationship quality
- Risk factors

Sampling Technique: Technique used to collect the sample was snowball.

Sample size: Sample size for the present study was 30 boys and 30 girls from Vadodara and 20 boys and 20 girls from Delhi between the age ranges of 17-19. Therefore, total sample size was 100 participants.

Procedure for data collection: The adolescents were identified from the colleges of Vadodara and Delhi. In the beginning, students from different faculties of The Maharaja Sayajirao University of Baroda were met and were oriented about the research. Further, the participants recommended other students who might be interested to be part of the study and will become as participants. First of all, participants were explained the whole idea of the research and the objectives individually. They were asked questions individually for 15-20 minutes. They were asked if they were comfortable with English or Hindi. Most of the Vadodara participants preferred Hindi.

RESULTS AND INTERPRETATIONS

The section consists of views of adolescents from cities of Vadodara and Delhi on social networking and relationships. The results were presented in following sections:

Section A: Purpose of using internet

Section B: Nature of relationships

Section C: Sincerity of relationships

Section D: Patterns of using internet

Section E: Comparing Vadodara and Delhi participants

Section A: Purpose of using internet

Results related to different purposes to login on social networking sites are displayed in Figure 2.

Fig 2. represents various categories of purposes, such as, using social media to build connections, to interact with new people, updating their knowledge, for passing time, studies, for entertainment purposes. There are 5% of Delhi boys, 3.3% of Vadodara boys and 10% of Vadodara girls who are not that much active on social media. They believe in building new connections and socializing so they have found this platform to be more feasible. *“Just aise hi time pass keliye ya toh fir contacts bhi badhte hai hume koi bhi kaam hota hain normally jo hum phone per nahi kar sakte, suppose, mujhe kisi notes ka pic chahiye”* (We login on social media for time pass and to increase the contacts whatever we cannot do on phone like taking notes we use to do through social media such as pictures) (Vadodara girl).

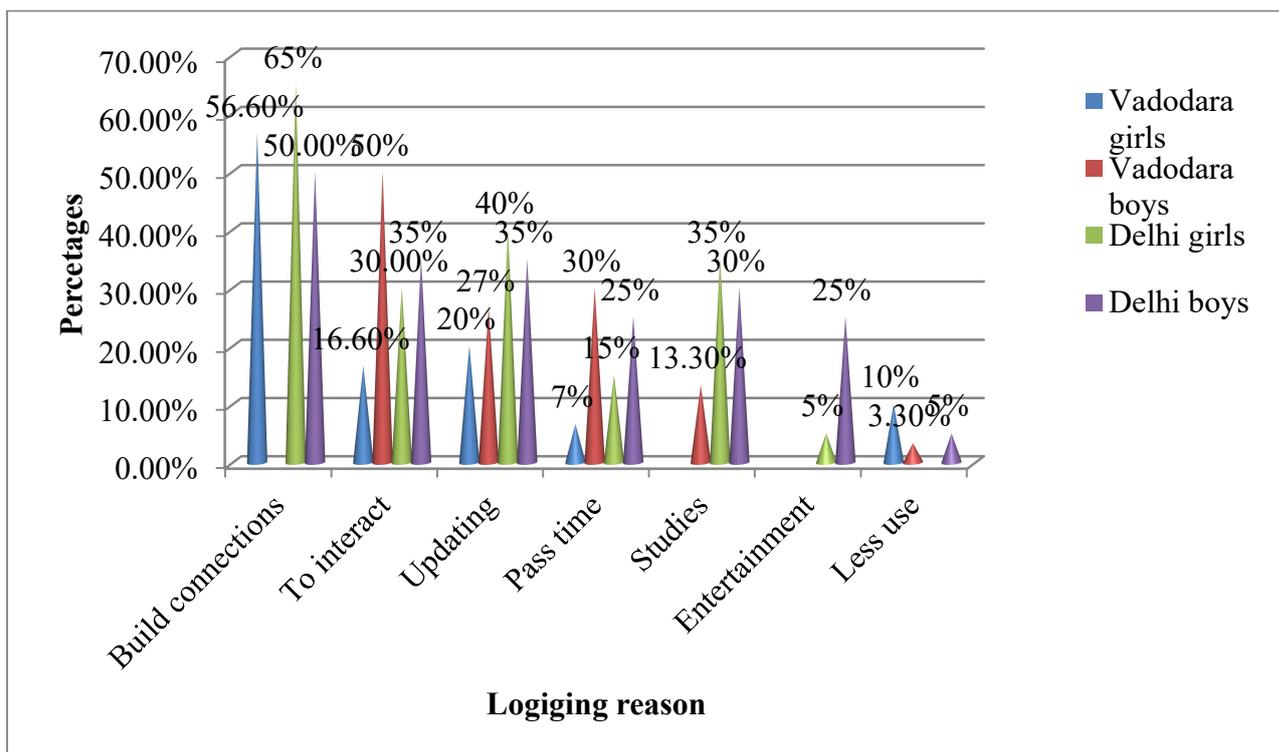


Figure 2: Reasons of login on social media

Section B: Nature of relationships

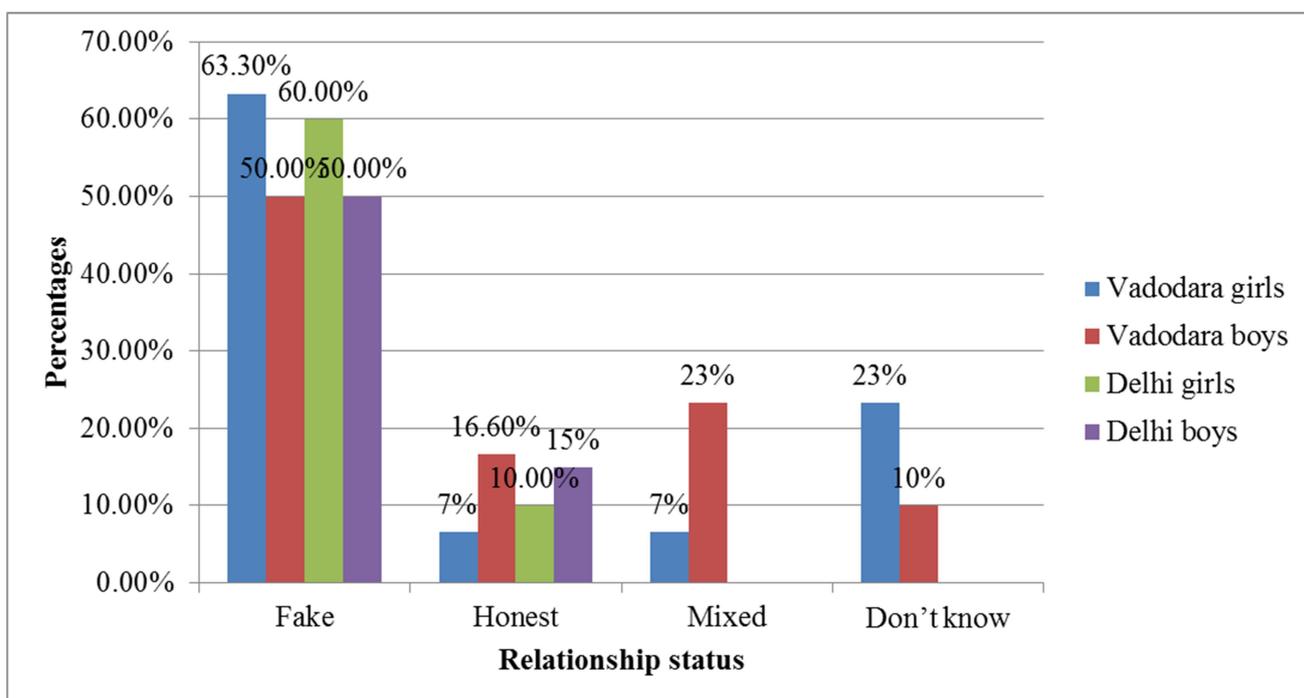


Figure 3: Nature of relationships

Fig3. shows views of adolescents from both the cities on the nature of relationships that youth have formed online in which 70% and 63% of the Delhi and Vadodara girls commented, that, the relationships formed online are usually fake as everything is behind the screen and anyone could disguise the real identity. Whereas, only 16.6% of Vadodara boys and 15% of Delhi boys reported that the relationships could be honest. Based on this it could be interpreted that the adolescents were aware about the frivolous relationships that are formed on different social networking sites. *“Fake hote hai real bohot kam hote hai mere hisaab se zyadatar log time paas karrahe hoty hai . 90 % fake hote hai and 10% by luck real hote hai but zyadatar log khud ko pretend karte hai online kyuki aap face to face nahi hote”*. (Most of the times they are fake. Very less of them are honest. Majority of people time pass on social media. 90% are fake only 10% are honest. By luck some may be honest most of the people pretend themselves on social media there is no face to face interaction) (Delhi Girl).

Section C: Sincerity of relationships

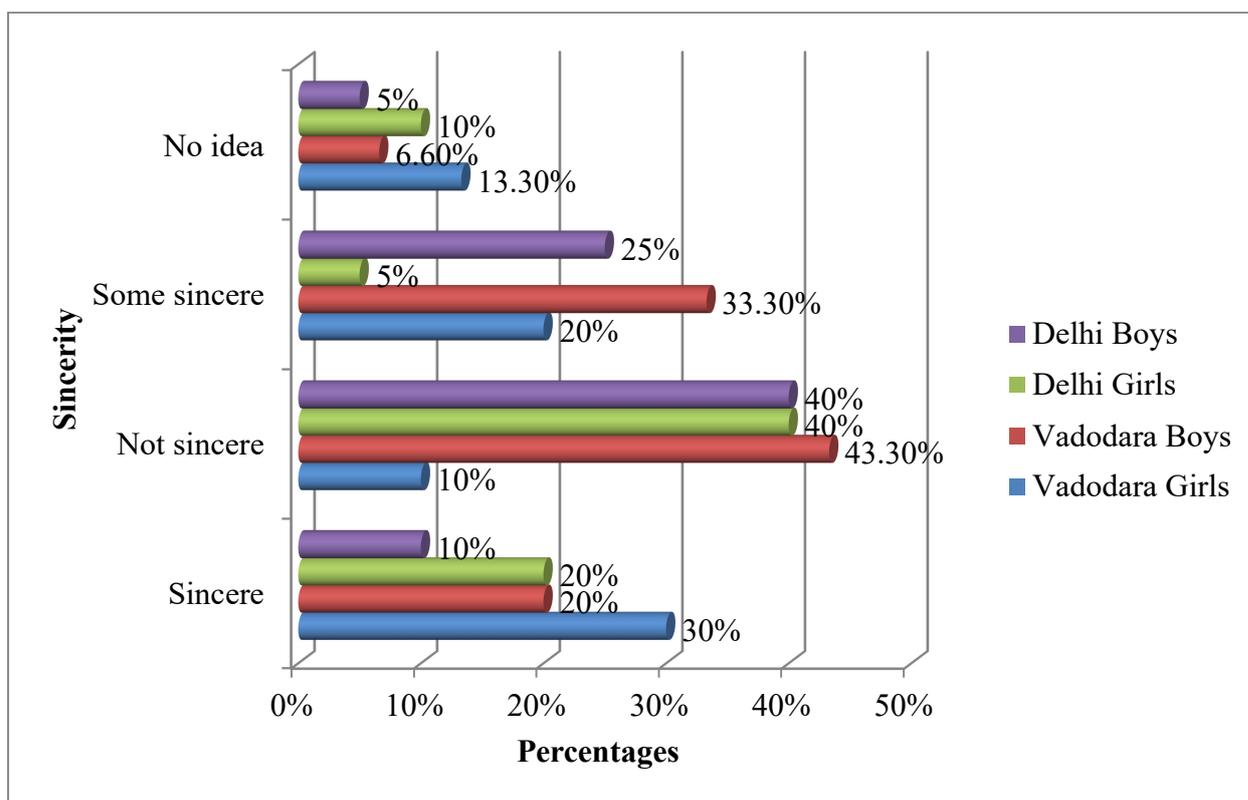


Figure 4: Sincerity of relationship

Fig.4. shows whether the online relationships are sincere. According to Vadodara and Delhi adolescents the online relationships do not lasts for longer period of time. Whereas, 30% of Vadodara girls reported that online relationships could be sincere. From, Delhi 20% of the girls commented that online relationship could be sincere. However, 13.3% of Vadodara girls do not have any idea about the online relationships.

Section D: Pattern of using social media

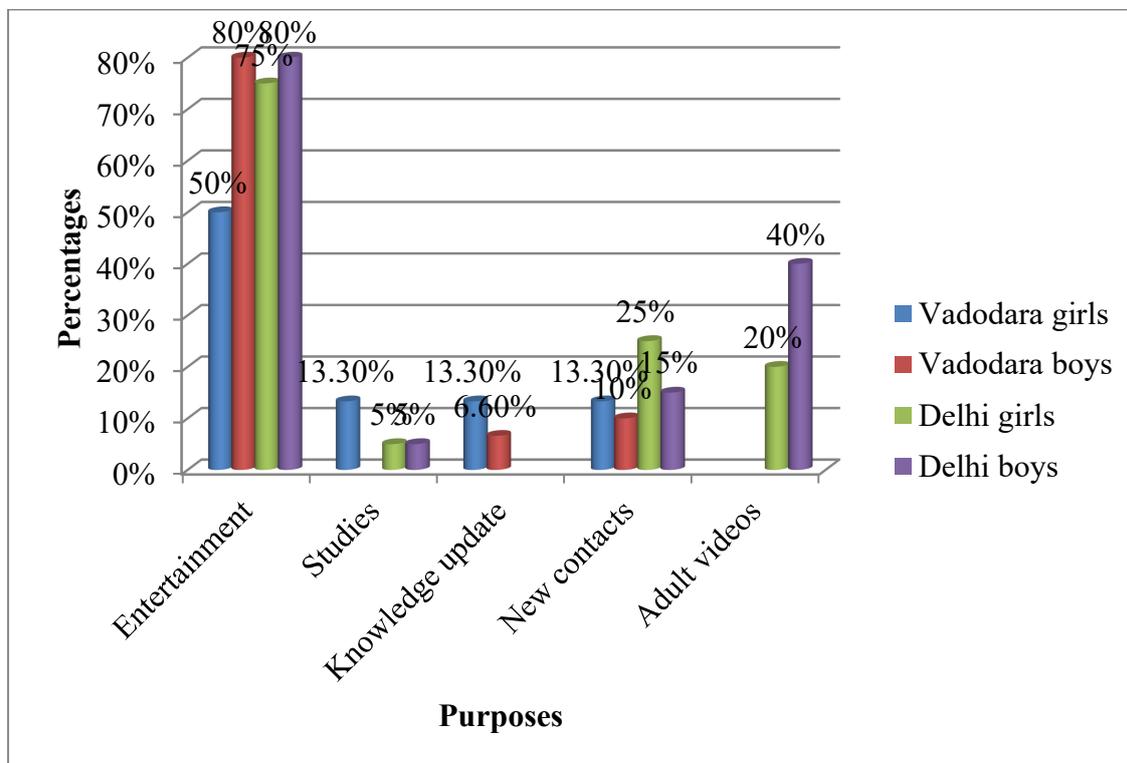


Figure 5: Purposes of using social media

Generally 80% of Vadodara and Delhi boys are using social media for the purpose of entertainment while 40% of Delhi boys and 20% of girls also commented on exposure of adolescents to different types of adults stuff and they reported that they use to watch some of them. (Fig 5) Delhi adolescents commented that their friends use it for flirting. *“Hum log toh fashion se related chizze dekhte hai, kabhi songs and movies bhi, but zyada tar naye logo se baat karne ke liye and also adult videos kabhi kabhi time pass ke liye jab kuch nahi hota”*. (We look for things related to fashion, sometimes songs and movies but most of the time we use to interact with new people. Sometimes look for adult videos for passing time when we do not have anything else to so) (Delhi Girl).

Fig.6. According to this graph, dating applications such as, tinder is more prevalent in metropolitan city of Delhi ,85% of girls and 75% of boys are aware about it,whereas, only 20% boys and 15% of Vadodara participants were aware about them. The reason could be adolescents of Vadodara prefer social networking sites such as, Facebook more than the online dating applications to build connections as may be they have not entered in that phase of dating applications till now ,so ,80% of Vadodara boys and girls never heard about these sites.

Section E: Different perspective of Vadodara and Delhi

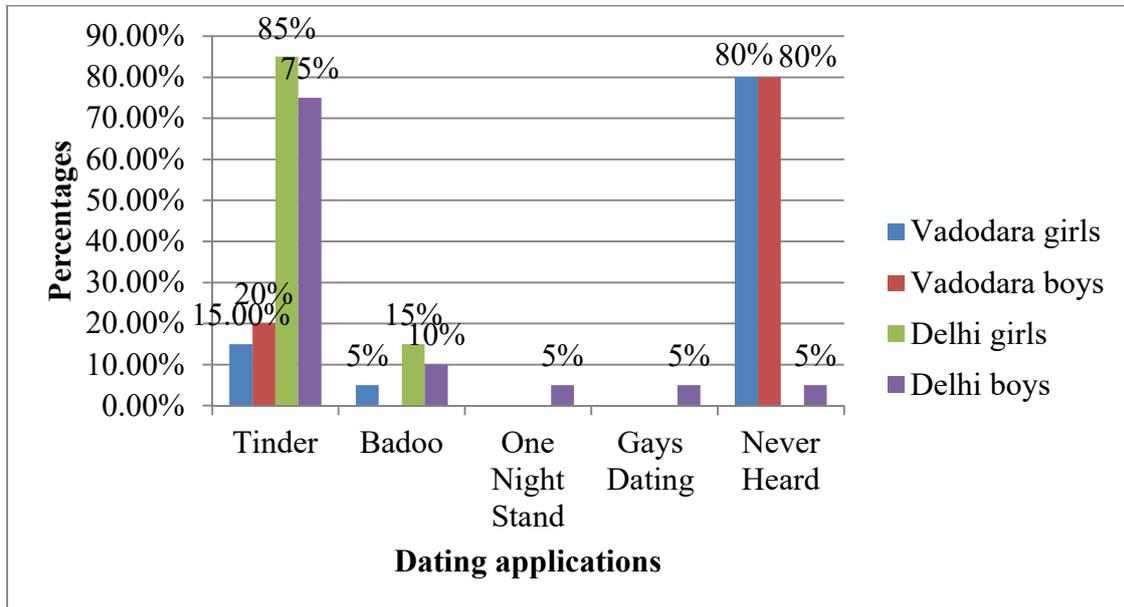


Figure 6: Dating applications

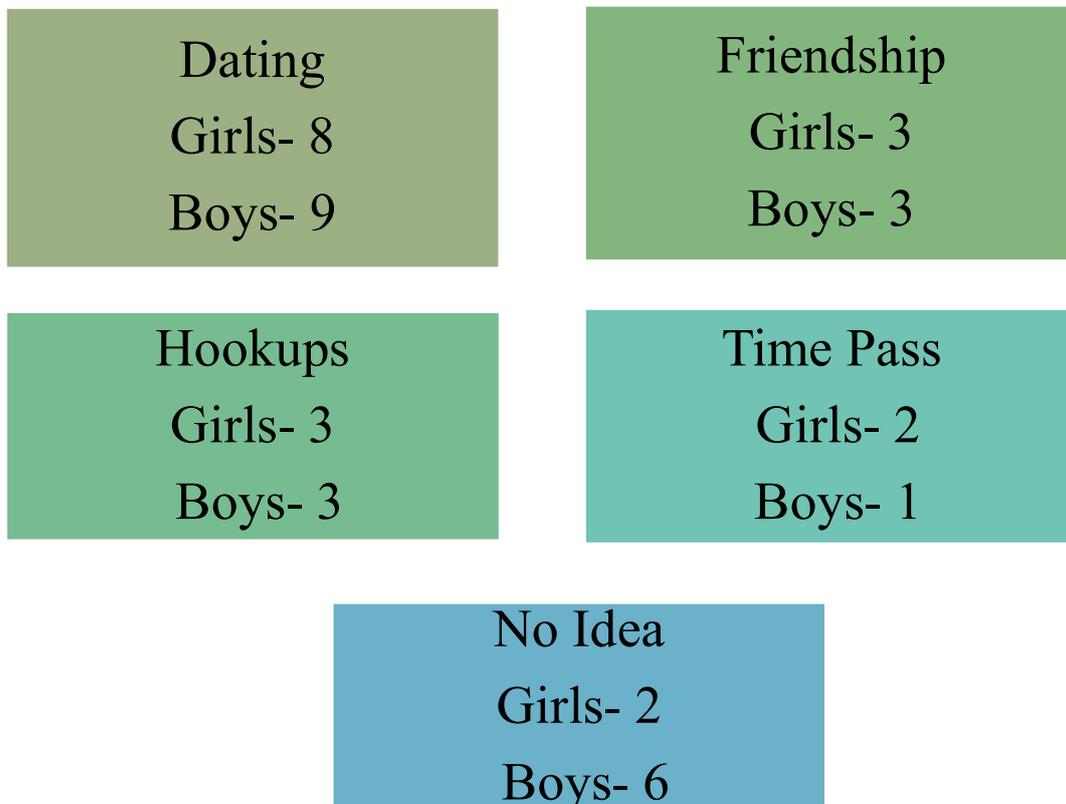


Figure 7: Purpose of using dating application (Delhi)

Figure 7 shows different purposes behind usage of various dating applications. Delhi participants were using this for dating, that is, 8 girls and 9 boys while of these, 3 each from boys and girls revealed that they use the sites for Hookups which refers to casual sexual encounters.

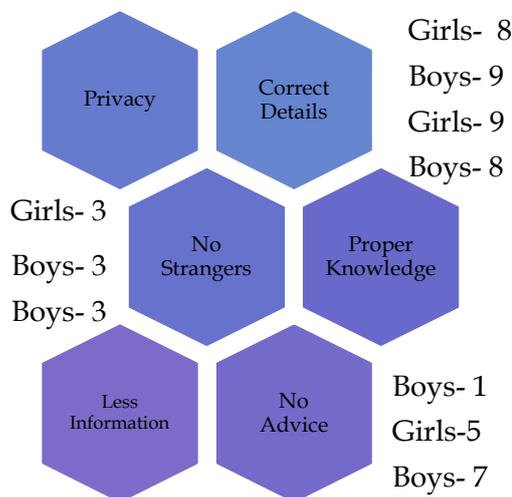


Figure 8: Tips to online new comers (Vadodara)

From figure 8, it is evident that the adolescents from Vadodara stated some advises for new comers who would be making their profile for the first time on social media. 8 girls and 9 boys said that the new comers should keep privacy in everything so that their information would be secured. 3 boys also commented that before making profiles the new comers should read about the applications and then agree for further steps. *“Satark raho aur friends ke guidance ke bina social media per account mat banao. Friends aisse banao jo tumhe positive guidance de or influence kare aur parents ko batao ki mere friends ne aissa suggest kiya hai. 3 logo per hume hmesha depend rehna chahiye parents, teachers and friend”*. (Be aware and don’t make id on social media without guidance of friends, make friends that give you positive guidance, and influence you and tell your parents that my friend is suggesting me this. Always depend on 3 people- parents, teachers and friend). (Vadodara Girl).

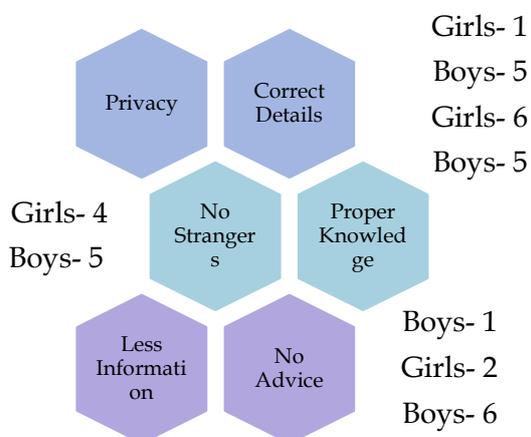


Figure 9: Tips to online new comers (Delhi)

Figure 9 shows certain tips that Delhi adolescents have given for online new comers. The categories for Delhi and Vadodara participants appeared to be same. Adolescents from both the cities have almost same advices to give to the new comers. The responses of the adolescents come under these categories only. In Delhi 6 girls and 5 boys reciprocated on uploading correct details and no false information. *“Like jab hum new new social media par aatey hai toh hume bohot craze hota hai, to, itna crazy nahi hona chahiye aur ek limit tak active rehna chahiye”*.(when we login on social media there is so much craze, so, we should not be that much crazy and we should be active for some limit only) (Delhi Girl).

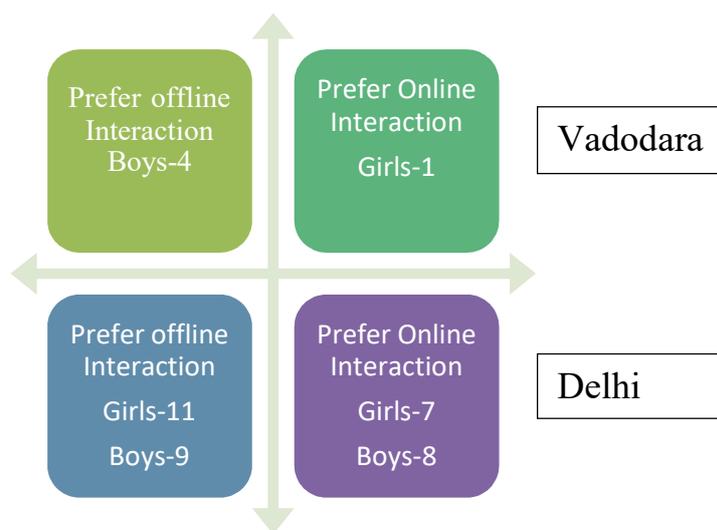


Figure 10: Preference of interaction

Fig10. It is evident that both Vadodara and Delhi adolescents preferred more offline interactions than the online, as, they consider that online interaction is mostly virtual, as, two people do not know each other and they are always behind the screen so there are more chances of frivolous relationships and manipulations. In Vadodara, 4 boys preferred offline interaction and only 1 girl preferred online interaction. In Delhi 11 girls and 9 boys preferred offline interaction and 7 girls 8 boys preferred online interaction, as, according to them, everyone should first interact on social media then face to face to avoid anxiousness.

DISCUSSION AND CONCLUSION

In the previous couple of years, internet dating users have been occupied in their virtual world, as they spend quality of their time in dating through internet. However, there are people who are not using dating sites to find their romantic partner. This is true for adolescents from Vadodara as they generally reported that they were not aware about dating applications, and if they were aware then they were not using them.

On the other hand, Delhi adolescent’s involvement in different dating applications was high. The reason could be, Delhi being the metropolitan city consists of huge diversity which may result in isolation of its people .Hence, the adolescents turn toward different sites to fill their vacuum of

emptiness and isolation. Whereas, in city like Vadodara because of smaller distances, people were more connected and therefore the use of the virtual means was marginal as compared to Delhi.

Reasons of using dating applications

Although adolescents from both the cities used different dating applications they believed that some of the relationships formed online could be feign. They were well aware that online relationships were not durable, and yet many of them were using dating applications to form new relations. According to the adolescents sometimes social media helped them to interact with people especially for those who found face to face interaction terrorized.

Among the two cities Delhi adolescents were more involved in formation of online relationship on dating sites rather than Vadodara adolescents. They had knowledge about the percentage of feign relationships that were made through online and even their consequences, but still they used internet as a first level, as they were still exploring the technology. Sometimes, they were in serious online relationships and sometimes they had a casual and flippant attitude towards them as reported by the adolescents from both the cities.

Privacy

Today adolescents have options for high privacy settings for keeping their profile and details private. They are even concerned about updating their picture as profile picture, as it can be misused by many people. In the online world, it is true that the rules and regulations are not firm; scammers are everywhere. Ultimately, it is the users who handle their profile with lot of concern and awareness (Tracy, 2008).

Sometime, people post something nasty about anyone or abuse someone, but may be after sometime due to some reasons, they want to delete it but they were unaware about the fact that, everything even if it is not visible always remains in web space forever. Also, the notion of privacy is limited to the authenticity and access of information by the users. But what about the companies that pry into our lives and have access to all our data? The adolescents of the present study have not reported about possible misuse of data by the companies and governments and also regarding cyber-crimes. This indicated that perhaps they were not aware of the different ways in which privacy can be breached by different parties. Lastly, as reported by some participants they never accept unknown friend requests but it is possible that their friends were sending unknown requests to someone and the third person was accepting the requests which denotes that adolescent's knowledge about privacy was not adequate.

Entertainment purpose

Through this study it was evident that adolescents used social media more for entertainment and passing time. Whereas, there were many other avenues for which the need of entertainment and passing time can be fulfilled, but hours were just being wasted in scrolling, checking the updates. According to some responses adolescents from Delhi used to spend much time in involvement and interaction with people as compared to Vadodara.

Digital world

Individuals need satisfaction from any product or service at some point of time, when they attain the level of satisfaction or they have great experience they continue buying that product or a service. Sometimes the experience may not be that much favorable and may result in negative impact and feeling of rejection, and they may not continue with the service. When sometimes adolescents have negative experience or they regret something on Facebook they generally remove the tag themselves (Dhir, Kaur, Lonka, & Nieminen, 2015).

There were situations when adolescents experience conflicts and breakups they generally delete their accounts due to embarrassment and guilt. They remove their partner from every social media site they were connected to prove their level of aggression and loneliness. They didn't let other people to interfere in their current situation so they stop being social butterflies like earlier.

CONCLUSION

The present research underlines various facts related to formation of relationships through usage of different social networking sites and online dating applications, the nature of online relations through the perspective of adolescents from Delhi and Vadodara, specially, privacy issues that is important while creating an account on social media.

From the review it was determined, facts related to sensitivity of teenage years and their vulnerability towards the formation of the relationships. The study revealed that different usage patterns of social site among adolescents from both the cities, the extent to which the teens are now being influenced and more involved in the digital world. Some negative aspects of excessive use of internet are highlighted.

The study reflected the sample's concern for excessive posting and updating of personal information and the various consequences related to them. The study shows having proper knowledge of each application may help the adolescents from being the victims of cyber bullying and frauds.

"There was a time when people felt the internet was another world, but now people realize it's a tool that we use in this world."-Tim Berners-Lee

Implications of the study

- Adolescents from both the cities were aware about the privacy settings, but they sometimes neglect to set these settings and became victims. They keep updating details about their life indiscriminately, without the concern that someone might stalk them easily and take undue advantages of this platform.
- Parents are fewer users of these services as compared to the adolescents. Sometimes, they keep an eye on the activities of their children, such as, they keep record of what their children are watching or doing while they were online and may sometimes check the history. However, the teens are much quicker in deleting and updating the history.

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- Face to face interaction is better means of communication as it is done in real world and not behind the screen. Generally, adolescents who were more introverts and have less social network use this platform to publicize them and increase their friend circle by engaging in interaction with strangers.
- Lastly, as Human Development professionals, we can build knowledge about privacy related to pictures, personal information for adolescents. For parents, we can have workshop to support and protect their child through different ways such as educating them about some software in which they can have record of what their child do when he/she is online, as digital literacy and awareness is the need of today.

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ROMANTIC RELATIONSHIPS IN TRIBAL YOUNG ADULTS: SOCIAL NORMS, BELIEFS AND DEVELOPMENTAL IMPLICATIONS

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ABSTRACT

This study outlines different social and gender norms about romantic relationships in tribal communities of Chhotaudaypur Zila, Gujarat, India, and focuses on the attitudes and beliefs of young tribal adults (18-23 years) towards romantic relationships. It also reveals the nature of parental support and the ways in which these norms affect the quality of their relationships. Sixty young adults (30 men and 30 women) who had experienced or were currently engaged in the romantic relationship participated in the study. These young adults came from fifteen tribal groups. Mixed method approach- using an interview schedule and a 7 point Likert scale on relationship satisfaction –was used to collect data. Qualitative data shows that tribal social norms differ from one group to another and also across villages. Although the social norms were rigid to an extent, the young adults challenged these norms by engaging in premarital romantic relationships with ‘forbidden’ prospects and also eloping with their romantic partner. The quantitative data of the study shows that most of the participants of both genders were satisfied with their romantic relationships. The results are discussed in terms of the current trends related to premarital sex and relationship, the influence of peers and parental support in romantic relationships.

Keywords: Tribal young adults, romantic relationships, social norms, gender norms, parental support and relationship satisfaction.

INTRODUCTION

Romantic and sexual relationships play a central role in the lives of adolescents and youth (Sharma & Raju, 2013). The romantic partner becomes the first priority and they feel that time stops when they are with each other (Gala & Kapadia, 2013). So far, we have data for urban youth; however this study focuses on romantic relationships in the tribal community and social norms associated with them. The term tribe is difficult to define, but majority of the tribal people are situated in rural and remote areas. Tribal communities have their own rituals to follow according to their territory and tribal groups. Tribal people are those who are characterized by the following features: isolated, ethnic groups, low density of population, primitive economy, primitive technology, primitive political organization, primitive religion, lack of a script for their language and lack of education (Preet, 1994).

Young adults, romantic relationship and developmental implications

A healthy successful relationship can make young adults self-aware, confident, positive, interactive and on the other hand an unsuccessful relationship can actually affect persons' moral, social and intellectual development (Varma & Mathur, 2015). Aggression in romantic relationship is one of the common factors for breakups, physical assault, kidnapping rape and even murder (Sharma & Raju, 2013). After break up also they feel depressed but they find a way to divert their mind and engage in another relationship. A teenager who has a strong romantic relationship is normally much more motivated and could understand better about their desires. Basically a romantic relationship helps in individual's overall development, not just a sexual development or sexual identity but the general sense of identity (Varma & Mathur, 2015).

All implications and factors related to tribal life are affected by the globalization in the current scenario. For nearly two decades vast differences have been observed because of globalization, not only in developing countries but also in developed countries. It creates new opportunities as well alarming changes and warning. Tribals and Dalits who are still facing inequality may be worst affected (Barbar, 2016).

Social norms in tribal society

As Preet (1994), described tribals do not have much education, making it difficult for them to take the advantages of the new opportunities which are available to the mainstream population. Among all tribal groups the population of Bhill is higher in Gujarat than any other tribe. Mainly the field of reproductive health is much explored in the tribal community.

Romantic relationship, marriage and mate selection

Patnaik and Mehrotra (2005) described that every tribe has their own set of marriage rituals. A person cannot marry outside the tribal group otherwise he/she may be ostracized from the society. The cross cousin marriage is common and accepted. The practice of taking bride price for marriage is very common in tribal culture but the amount of bride price may differ according to the status and bargaining power of both the families.

Mate selection is very important and difficult decision one can make in their life. As tribals have different customs to follow, they follow different practices to choose their marriage partners according to their customs. In the Rajasthan and Gujarat, Bhill have festival called "*Gorgadedo*" in which boys and girls who are marriageable will perform a dance and if a boy likes any girl, he will touch her heel from the behind by his toe. If girl's response is negative then she will slap the boy and if her response is positive then they both will fall out of the circle. In Mahabharata and Ramayana they have mentioned that the partner for marriage is selected by checking the hunting skills. This is called as "*marriage by trial*" as they check whether he is able to hunt and feed a stomach of the family or not. The other type of marriage in tribal community is "marriage by elopement", "marriage by purchase" (Sparrow, 2016).

OBJECTIVES

- To know the social norms related to romantic relationships in tribal communities.
- To know the perceptions, beliefs and attitude about romantic relationship in tribal young adults
- To assess the satisfaction of young adults with their romantic relationship and romantic partner
- To know the gender differences in social norms and experiences pertaining to romantic relationship in tribal community

The next section presents methodology.

METHOD

The study adopted a mixed method design. The interview schedule were used to understand the views of individual and Relationship Satisfaction Scale (Burns & David, 1993) were used to assess the level of satisfaction of tribal young adults in their romantic relationship.

Sample

The participants of the study were young adults from the age range of 18 to 23 years (N=60, 30 young men and 30 young women) from tribal area of Gujarat: (I) currently engaged in romantic relationship (II) have had experienced romantic relationship in the past. The data was collected by the snowballing and purposive technique. All the participants were taken from the organization of vocational training where tribal youth was easily accessible.

Out of 60, 16 participants were Hindu Bhil, 13 were Hindu Rathwa, 9 were Koli Rathwa, 6 were Hindu Kokna and rest were Ravnava Rathwa, Mundadja Rathwa, Damor Rathwa, Haradiya Rathwa, Vaskadiya Rathwa, Kadshya Rathwa, Jamoriya Rathwa, Hindu Dodiya, Vasava, Paradiya Rathwa, Tedavla Rathwa.

RESULTS

Socio demographic profile

Out of 60 participants 15 participants were from Chhotaudaypur in which 11 participants were young women. As most tribal youth are coming from the Chhotaudaypur district in the vocational training centre, participants are also more from the same district. The rest of the participants were from other district of Gujarat such as, Amarpada, Godhra, Panchmahal, Dahod, Rajpipda, Kalol, Mahisagar, Bardoli, Narmada and others. According to census of 2011, the population of Bhil is higher than any other tribal group in Gujarat. Therefore, proportionately the numbers of Hindu Bhil and Hindu Rathwa participants are also higher as compared to other tribal groups in the study.

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Unique terms used by tribal young adults

During the interview, participants used different terms to denote a romantic relationship, of which some are common but their meanings are different according to tribal young adults. For instance, 'Setting' word is used for addressing their romantic partner. 'Love ship' is used for describing romantic relationship or love. 'Puchhavyu' is Gujarati word which means to ask for, the word is used to say" proposed." 'Rakam' means the jewelry which is given by the groom's family to bride. 'Kesar' means the saffron but in tribal community 'Kesar' is half amount of the money given by groom's father to pay the expenses of marriage to bride's father. 'Love marriage' is generally used when a person falls in love before marriage and marries with the romantic partner. Tribal youth were using 'love marriage' when they refer to marriage by eloping. Tribal young adults had used 'Bolvu' instead of the word 'In a relationship'.

The concept of romantic relationship

Meaning of romantic relationship

According to 30% participants 'care and affection' are the most important components of romantic relationship. In this particular stage friends and romantic partners becomes more important than parents and young adults expect care and affection from their friends and romantic partner. Only 7% participants have reported that they do not know the meaning of romantic relationship and these participants are those who knew about romantic relationship but could not express. As romantic relationship requires the involvement of the individual as a whole, physical relationship was one of the major distinguished characteristic of romantic relationship. Twenty per cent respondents emphasized on physical relationship.

Source of knowledge

Their notions about romantic love were reported to be based on media inputs as well as society at large, and also on their own past experiences throughout their maturity. Forty% young men and 28% young women have said that they have gained information from the society where as 47% young men and 35% young women have based their knowledge from past experiences. Six per cent young men and 3% young women who have said media as a source of information have mentioned TV shows and movie as a source. One young woman had also mentioned poetry (shayri) book as a source of information.

Friend's role in romantic relationship

Majority of the participants have reported about positive role of their friends. Only 2 participants have said they had negative impact in a relationship because of their friends. As rules and regulations are more rigid in nature for young women than young men, young women do not go out of their houses without any reasons, also many of the young women do not use the mobile phone and those who had mobile phone were given by their romantic partners so they have to hide from their parents. That was the reason of conveying the message by common friend of romantic couple. One exceptional response by one participant was that he wanted to help his friend but because of his friend he got trapped in a false legal case. He expressed, "The impact is not in my relationship but because of my friend's relationship. Means he is married but he had affair outside

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the marriage so he eloped with that girl and at that time I and one more friend were helping him. When police caught us, the girl filed a case against all of us for attempt to rape. This idea of filing the case was given by my friend, as he taught otherwise they would be separated.”

Marriage, conflicts and criteria for romantic relationship

Both young women and young men wanted their partner to be of good nature. Young men reported that their romantic partner should have polite nature, should not go against their (young men) decision, and caring, whereas, young women wanted their partners to be understanding, caring and occasionally pampering and non-aggressive with them. Although only 3 men had mentioned household work in their first 2 preferences, all men have listed the household work in the list of their criteria for their romantic partner. Three men have mentioned education as one of the important criteria because they believe that if a women is educated she can teach her children but when probed further whether they will allow their romantic partner to go out and earn, they denied to send them. All of the young women participants have mentioned earning capacity/occupation of the romantic partner is an essential criteria. Eight per cent of young women have reported that they do not want their romantic partner to be addicted by alcohol or tobacco but one young man also reported that his romantic partner should not be addicted by tobacco.

Moving towards the commitment of marrying the romantic partner, 46.66% respondents have reported that they are not going to marry their romantic partner although they are engaged in romantic relationship. One young woman said that she is not going to marry her romantic partner because of his lack of education. While her partner has completed up to the eighth standard, the young woman herself has completed twelfth standard. Thirty five per cent participants have mentioned that they will get married for sure. This confidence comes from the approval of their parents and for those whose parents did not approve their romantic relationship, they reported that they will marry by ‘eloping’. Only 6 participants have mentioned that they want to marry but could not marry because they were cheated by their romantic partner or the relationship was not accepted by the society. In tribal society one cannot marry in the same village and in their maternal village, they also cannot marry a person with different surname.

Most of the conflicts occurred because of the phone calls (Figure 1). Participants have mentioned that if their romantic partner does not receive a call or if they are getting busy calls they used to fight with their partners. That depicts that young adults get possessive if their romantic partner’s call is busy, like one participant have said, “*when her phone is busy, I feel like with whom she might be talking, what if she is talking to someone else!*”. Possessive behavior and Openness goes side by side in romantic relationship. As both the partner are expected to be open and share each and everything with each other and when it comes to third person in their relationship they feel possessive and start protecting their relationship .

Twenty two young adults prefer to simplify the things by telling the truth and explain the real reason to resolve the conflicts whereas 13% participants have mentioned that they will leave things as it is and leave on the time to be resolved.

Pre-marital sexual relationships and gender differences

Premarital sexual relationship is more common for tribal young adults. Forty one participants out of 60 from which 18 were young women and 23 were young men who felt that premarital sexual relationship is alright. Only 4 participants have reported the conditions that only on mutual desire and if they want to get marry with the same romantic partner then premarital sexual relationship would be alright. Two young men have also reported that they had an experience of premarital sexual relationship with multiple partners. Twenty participants have reported that touching, holding hands and hugging were alright but sexual relations are not appropriate before marriage because of societal pressure, reproductive health issues such as AIDS and pregnancy and because of some moral reasoning. Only 2 participants said that having physical intimacy is not appropriate before marriage.

Participants were asked about their support to their sibling's romantic relationship. There were differences found in the answer according to gender. Young men told that they will support their brother but not sisters as it would spoil the reputation of the family and even after her relationship, she must marry a person by parents choice. Young women also said that they will support their brother and sister, both, after conforming that a person is appropriate for them and their family.

Social norms regarding romantic relationship

Moving to a practice of tribal community, paying bride price is very common at the time of marriage. The groom has to pay bride price and the amount of bride price has differed from village to village and one tribe to other tribe. Paying Bride price and giving jewelry (Rakam) is responded by highest number of participants. Some participants also mentioned that if a romantic couple elope and do not marry then also a man has to pay the bride price according to the rule of their community. Also the bride price depends on the type of marriage a young couple preferred to do. If the marriage is arranged, the bride price would be normal as per rule but for the love marriage they have to pay more than bride price in arranged marriage.

As one lives in the society, the society influences one's behavior and relationships. All the participants mentioned negative role of the society such as people make comments and pass judgments about them, family members had shouted on them because of society's gossip, the people in the society blamed parents for not being able to discipline their children. None of the participants have said a positive impact of the society in their romantic relationship. One young woman stated that society would always try to disturb the relationships both the families of romantic partners. These findings contradict the findings of a previous study on urban youth by Gala and Kapadia (2014).

Analysis of Relationship Satisfaction Scale

In the analysis of relationship satisfaction scale there were no significant 't values' suggesting gender difference. The mean score of intimacy, closeness and degree of affection suggest that when participants feel close and cared by their partners, they feel more satisfied in their relationships. As this was a 6 point rating scale the highest value suggests more satisfaction. Therefore the satisfactions mean score of their own role and their partner's role is also high so their overall satisfaction is high as shown in Table 1.

DISCUSSION AND CONCLUSION

The present study confirms that the initial stage for love is physical attraction towards opposite sex and then gradually it was converted in to friendship and lastly moved to the phase of romantic relationship. Participants learnt the behavior from their own experience and the observation of other people around them. However, they are unaware of reliable sources or other forms of guidance to gain knowledge of romantic relationship and develop healthy relationship with their romantic partners. In addition, a point of concern is that, there are no alternative role models from whom they can learn, media and society reinforce similar narrow and toxic ideas about love, sex, and gender roles.

Most young men see romantic relationship as only an opportunity for physical intercourse, yet according to NFHS 3 (2005-2006) large number of youth in India, both men and women between 15 to 24 years of age, do not know about when a girl is most fertile in her menstrual cycle. This study on tribal young adults reveals pre marital sexual relationships were common among the couples and two young men also mentioned that they have pre marital sexual relationship with multiple partners. This may enhance the risk of getting HIV/AIDS or STD. . Tribal young adults, like all other young people in this country, need sexual education as a part of their curriculum so that they can get clear idea about the same.

In this study, romantic relationships were not linked to commitment to marry. Tribals were aware about their social norms for marriage; viz. whom to marry and not to marry, but still they were engaged in the romantic relationships for a long period of time without commitment to marry. Although many young adults would not marry their romantic partner, they expressed interest in continuing their current romantic relationship even after their marriage with another person of their parents' choice. The reason behind refusal for marriage is the social structure for getting married or choosing a life partner. According to tribals' social structure in Gujarat, a tribe cannot marry the person from the same village and from the maternal village as they are considered to have close genetic linkages and hence such ties are treated incest. In India parent's approval for romantic partner is important for getting married. In any kind of marriage, whether it is love marriage or arranged marriage, parents ensure certain factors for their child's romantic partner such as, habits, financial capacity, social reputation, horoscope alignment and genetic health history (Gala & Kapadia, 2014, Bowman & Dollahite, 2013, Gupta, 1976).

Marriage in tribal community also includes bride price. The social norms and the way tribal people deal with these norms differ from family to family, village to village and one tribal group to another tribal group. Eloping is not so easy and not easily forgivable in the tribal areas of the Gujarat. Despite this, young people wish to elope with their romantic partner and get ready to face non-acceptance from the parents, which is more often in case of young women At the same time parents do accept their children back, even after their daughter elope with her romantic partner and stayed with him for 5 to 6 months. Even when parents are aware about young adult's romantic relationship and support them for the same, young adults want to elope out of excitement. A woman who eloped has some options for marriage such as, she can marry the men who are older (10/15 years) than them, and man could be having children from his previous marriage.

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Usually in the stage of adolescence and young adulthood peers or the friends become the important part of their life. This can lead to unforeseen problems when in the name of friendship they get into situations which cause them legal hassles and permanent damage to their reputation. In this study, a young man who helped his married friend to elope with an unmarried young girl, got into serious trouble when the girls filed a bogus rape case against him after being caught by the police. Based on this incident it could be suggested that young people should be clear about the expectations from friendship. Adolescents need to be guided so that they can understand the long term consequences of their actions. This also reflects poor decision making, so basically they need some input in the area of decision making which may help them to avoid irreversible undesirable consequences.

All the findings of the study show the impact of globalization and westernization throughout the tribal community as well as the main stream population. Globalization is the free movement of products, services, capital, individuals and information across national boundaries. Tribals are a part of the Indian culture; and yet they are different. Age old subjugation of the tribals; have cut them off from the mainstream of economic development of the nation as a whole (Ezhilarasu, 2014). Globalization has influenced each feature of tribal life going from social, monetary to political circles (Sahoo, 2014).

According to the present study tribal population lives separately from the mainstream population but they are getting more influenced by them compared to earlier times. As mentioned in the Sahoo's article (2014), before globalization each tribe lived in different villages but today each village population have a variety of different tribes living together, Also a small part of the population from mainstream helps them to uplift economically as before globalization tribals were economically poor. In the study many of the participants were graduates and one of the siblings of the participant is doctor also, that shows the clear impact of globalization in current world and upward movement of the tribes. The influence of globalization and technology is much faster and not just in tribal community but also in urban areas. It also decreases diversity thus increasing homogeneity. Based on our previous readings on tribal cultures, we were expecting more relaxed gender norms related to liberty and choosing sexual partners and such based on previous review. However this study conveys that the societies have become less diverse and that we find more similar norms even in the tribal societies.

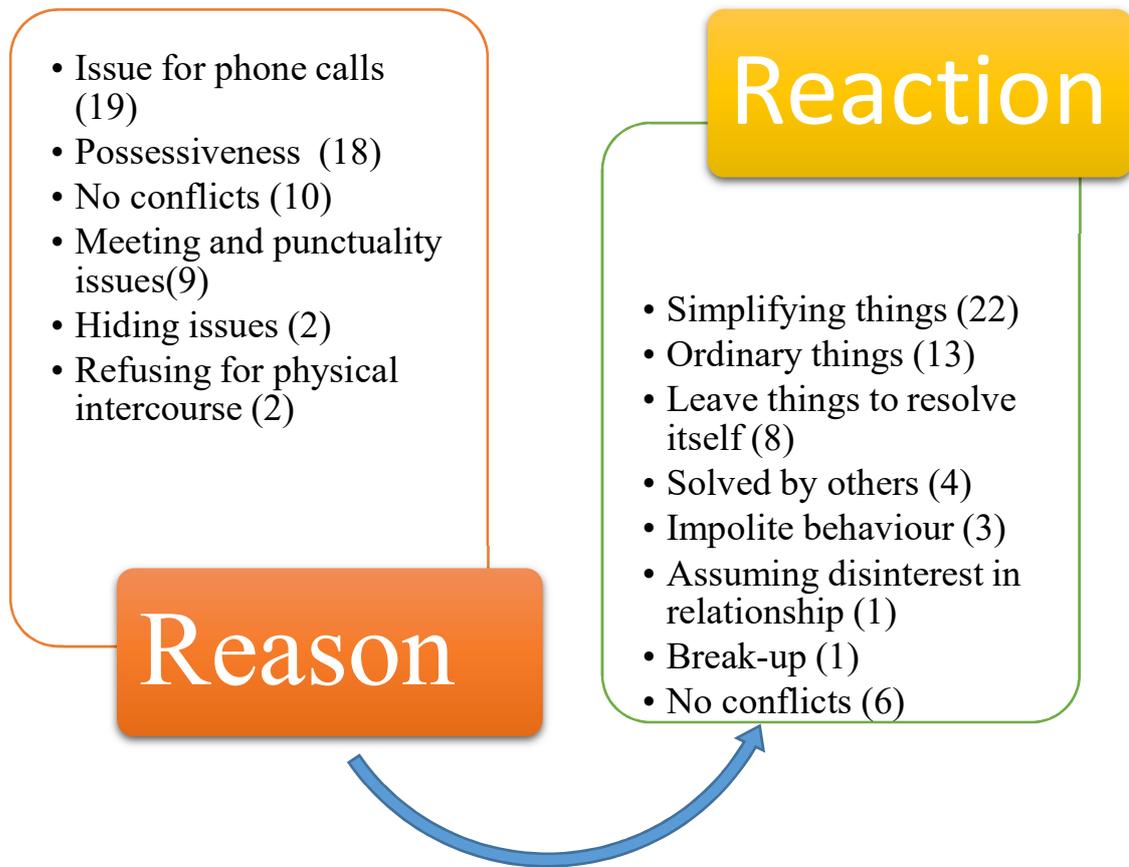


Figure 1. Reasons of conflicts and how respondents react on it

Table 1. Satisfaction in Romantic Relationship

Communication & openness	4.90	1.548	.165
Resolving conflicts & arguments	4.45	1.651	1.666
Degree of affection & caring	5.27	1.300	.592
Intimacy & closeness	5.42	1.109	1.287
Satisfaction with own role	5.38	1.059	.363
Satisfaction with partner's role	5.23	1.320	1.794
Overall satisfaction	5.25	1.230	1.819

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