

**Designing and Developing Innovative Sari and
Blouse for Obese Adolescent Girls**

**Aparanjitha Shalini, S
(12PTF003)**

**Thesis Submitted to the
Avinashilingam Institute for Home Science and Higher Education
for Women, Coimbatore – 641 043**

**in partial fulfilment of the requirements for the degree of
Master of Science in Textiles and Fashion Apparel**

MARCH, 2014

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**Signature of the
Head of the Department**


**Signature of the
Supervisor**

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1. INTRODUCTION

Clothes are part of our life, in book of genesis, Adam and Eve, the first human being, realized that they are naked and made clothing for themselves out of fig leaves (Jefferson, 2009). Clothing is very ancient technology of fiber and textile materials worn on the body and it is one among the most important three basic needs in every human being. Clothing is a feature of nearly all human societies and it protects our body from various climates, toxic chemical and gives us a good comfort and appearance (Basak and Das, 2012). Although the exact origin of sari is not known researchers have shown existence of sari way back in 3000 BC in the Indus valley civilization (Kendra, 2008)

During the Stone Age, people used animal skin as clothing and archaeologists have found bone needles that allowed people to sew skins together to make practical costumes. The first garment makers started from flat skins. The earliest covering for both men and women were probably simple loin cloths which were supplemented by large skins used as blankets in inclement weather. Later in colder climate skins were sewn together in simple tunics to provide more warmth. After, ancient people learned to pound the fibers of the flax plant into thread to make linen. This was woven into cloths, after people learned to spin and weave the wool to make garment without killing the sheep. While everyday people used woven cloths draped in varying ways (Salisbury, 2001). The Vedas says the stage Grits mad was the first to show cotton and obtained 10sersofcotton wool. He made a wooden bobbin for cloth making and slowly fabrics were woven from silk, kosaetc as saris (Prakasan, 2009)

The practice of dyeing cloth to add color started during the Paleolithic era (Cannon, 2002). During the period, Squares of cloth direct from loom and without being cut were draped around the body. With role of time comforts, irrespective of climate, season, environment, culture and society become a part of clothing (Kulshretha and Kahyap, 2007). Clothing has been called the silent language - symbol expressing ones ideas and provide information to others. Clothing choices express a person's self-image (Marshall et al., 2012).

With years rolling down decoration was enabled into the cloths. Women wore long cloth draped around the body have been the basic of the dresses of people all over the world for centuries; it slowly changed into name as sari (Drudi, 2007). The word sari evolved from the prakrit work 'sattika' as mentioned in earliest jainbuddistliterature. The history of Indian clothing trace the saree back to the undusvalley civilization, which flourished during

2800-1800BC around the western part of the Indian subcontinent. Ancient Tamil poetry, such as the Sillappadigaram and the Kadambari by Bnabhata, describes women in exquisite drapery or sari. Some costumes of historians believe that men's dothi, which is the oldest Indian draped garment, it is the forerunner of the sari.

Although the word 'sari' now has general usage throughout India, it is a modern term that was not frequently used before twentieth century. It is derived in south-western Dravidian word Sari, which was one pronunciation of the more general Kannada word Sire (Lynton, 2002). The traditional visual art of different people of this world are integrated into visually every aspect of life, with some the most important forms found in every day material items they make and use depending upon the society, these artistic traditions find expression in clothing, pottery, basketry, and other furnishing of their homes. Although these material items may be elaborately decorated, for the most part these items are utilitarian valued not just for their beauty but for their usefulness as well (Bailey and Peoples, 2012).

Design involves basic elements like line, form, shape, color, rhythm, unity and space. A well designed garment has beauty and appropriateness which makes it suitable for the wearer and for the occasion. Fashion is the prevailing mode which cannot be ignored, but which can seldom be used as a guide for attractive cloths for every one. Fashion forecasting is the more important for designer.

Designers choose the color, silhouettes and fabric of their collections 'what inspires a designer' the entire world. Designers attend art gallery read and listen to the media, go to movies travel, study history and observe what people are wearing from all these designers get an inspiration (Gatterson and Steward, 2009). Designers play a vital role in bringing about a drastic change in appearance of different items produced by the textile industry. A fabric with design is more capable impression than the ones without them (Sangamma and Rani, 2012).

Today the most common style in for the sari to be wrapped around the waist, with the loose end of the drape worn over the shoulder. Sari became the traditional dress of India. Sari is worn in many ways by women in different parts of India. Underneath the sari, one wears a petticoat, a waist to floor length skirt tied tightly at the waist by a drawstring; and a choli, a blouse that ends just below the bust. The sari is 5 to 6 yards in length. The sari is also made of some man-made material like nylon and terylene (Jain, 2010).

Considering the above facts, the investigator decided to take up a study on “**DESIGNING AND DEVELOPING INNOVATIVE SARI AND BLOUSE FOR OBESE ADOLESCENT GIRLS**” with the following objectives.

- To understand the preference of sari among obese adolescent girls
- To design and prepare innovative designer sari for obese adolescent girls
- To assess the prepared sari.

2. REVIEW OF LITERATURE

2.1 IMPORTANCE OF CLOTHING

2.2 STANDARD MEASUREMENT

2.3 DESIGN DEVELOPMENT

2.3.1 Pre requisites in surface designing

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2.3.3 Types of design

2.4 COLOUR

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2.9.3 Variations

2.1 IMPORTANCE OF CLOTHING:

Apparel is used to describe the clothes worn by people. There are many different types of apparel worn to suit different occasions and places affect the type of clothes one wear. The four main factors which are the climate of country, its customs, tradition, religion and the different status of a certain group of people in country (Thomas, 2006)

Clothing is an integral part of human life. Primary role of clothing is to form a layer of barriers that protect body against unsuitable physical environment. The protection of body fulfils number of functions like maintaining the right thermal environment to the body, which is essential for its survival and preventing the body from being injured by abrasion, radiation, wind, electric, chemical and microbial substance. These traditionally classified function of clothing clearly indicated that it plays a vital role at the interface between human body and its surrounding environment in determining the perception of comfort status of the wearer (Bhargava and Gahlot,2012). Thus clothing should be no more than a tool, and aid in expressing what and who the person is. It is a reflection of one's taste, one's life and value (Mehta,2013).

2.2 STANDARD MEASUREMENT

Standard measurements are given a set of measurement that comply with a commercial sizing. These measurements are a result of extensive anthropometric studies carried out for different age groups, height & griths (salija, 2006).

2.3 DESIGN DEVELOPMENT

Design is an organization when anything is designed, it is put together with some intent or goal in mind. (Prakash,2004).

2.3.1 Types of design

The two types of designs are Structural & Decorative designs.

STRUCTURAL DESIGN

It is the one of the most important means of identification which represents the fundamental character of the article under consideration. This fundamental quality is potent in conditioning whether the article is considered good or poor in design. Structural design also includes color, texture of material (Neelimar, 2009).

Decorative design

This is the surface enrichment of surface design. Any lines, colour or material that have been applied to a structural design for the objective of adding a richer quality to it, constituted its decorative design. Decorative design adds to the luxury of design to the garment. Beautiful decorative effects in dress may be obtained through the use of well-planned tucking or bands.

Decorative design types

Conventional design is one that depicts some real creature / object. But a conventional does not have to a picture of the world. Geometrical design using simple geometric forms such as circles and squares in design and decoration (Melles&Effers, 2002).

Natural design is a design imitating nature or the usual natural surroundings. Abstract design which has no referents to anything. Concrete in the real world historical design is a design that semantics in every day objects & architecture (Melles&Effers, 2002). Conventional design is one that depicts some real creature / object. But a conventional does not have to a picture of the world. Geometrical design using simple geometric forms such as circles and squares in design and decoration (www.falesugar.com).

2.3.2 Elements of design:

The elements of design are;

Line

In clothes an important part of design. When line is used correctly it becomes a very important factor in the development of a pleasing appearance. The most important lines in our cloth are the outlines of our figure or silhouette. Line may lead the eye vertically, horizontally and diagonally (Guptha et al., 2005).

Form

Form can be defined as the shape or silhouette of an arrangement. The design might have circular or triangular form or might be composed of number of curved lines (Griner, 2000).

Texture

Texture refers to the 'hand' and the look of the fabric. Hand means the feel of the fabric soft or harsh, bulky or fine, cold or warm, flat or textured. The look of the fabric can be categorized as shiny or dull, printed or plain, solid or striped, or the type of weave (Harder, 2004).

Shape

The form enclosed within drawn lines makes the shape of a picture. It has height and width (Narang, 2006). Shapes are distinct areas on two dimensional surface that are formed when intersecting and connected lines enclosed space (Pathus,2011).

Colour

Color is a fundamental consideration in design process. Color is the first element that is noticed about a design and influence how that garment or collection is perceived. Color is often the starting point of the design process. Color is the property of an object that results from the reflection, transmission or emission of light waves which cause a visual perception in the eye depending upon the specific wavelength involved. Each color have different wavelength or frequency (Mekelvey and Munslow, 2003).

2.3.3 Principles of design

Principles of design are important to create a harmony design but are flexible in terms of current fashion trends. The principles of design are Proportion, Balance, Emphasis, Harmony, and Rhythm.

Proportion

Proportion is related to both size and balance. It can be thought of in terms of size, where one extensor area it compared with another. Many current design standard are based on the designs of the ancient Greek (Madsen, 2004).

Harmony

Harmony is otherwise called unity. If the principles proportion, balance, rhythm and emphasis are applied creativity the resistant design is said to have the harmony. Unity means that all elements of design work together to produce a successful visual effect (Kellor, 2011).

Rhythm

Rhythm refers to the flow of material through color, line, form, texture, and space. Rhythm is after created with repetition and transition. Repetition is the repeated use of an element line, texture, shapes, that are repeated also create rhythm (Kaur, 2010).

Emphasis

Every picture has a central point that highlight the main theme of the picture and to take it more lively (Narang, 2006).

BALANCE

A picture or illustration is said to be balanced if both of its halves have equal forms and color (Narang,2006).

2.4 COLOUR

Color is dynamic. It not only appeals to the intellect but also influence our emotions. Color can be excited or relaxing. They can create warmth and coolness. There is some evidence that certain colors have greater appeal than others, some appeal more to men, some appeal more to women, and some appeal more to child. Some common colors associates are

YELLOW	–	Warm, sunny, bright, cheerful
RED	–	Warm, stimulating, exhilarating, courageous, vigorous
ORANGE	–	Lively, joyous, cheering, warm
GREEN	–	Cool, quiet, calm, restful soothing, refreshing
BLUE	–	Coolest of colour, serene, tranquil, peaceful, quieting
PURPLE	–	Rich, royal, dignified, dramatic, enigmatic
WHITE	–	Pure, light, cool
BLACK	–	Villainous, dead, grave, warm (Gupta,2005).

2.4.1 Colour wheel

The color wheel is the device that helps artists designs to combine, contract of blend colours successfully, (Gorden, 2002)

- i. Primary hues are red, yellow, blue
- ii. Secondary hues are orange, green, violet
- iii. Intermediate hues – when primary color is mixed in equal part with its adjacent secondary Color , the result is an intermediate hue

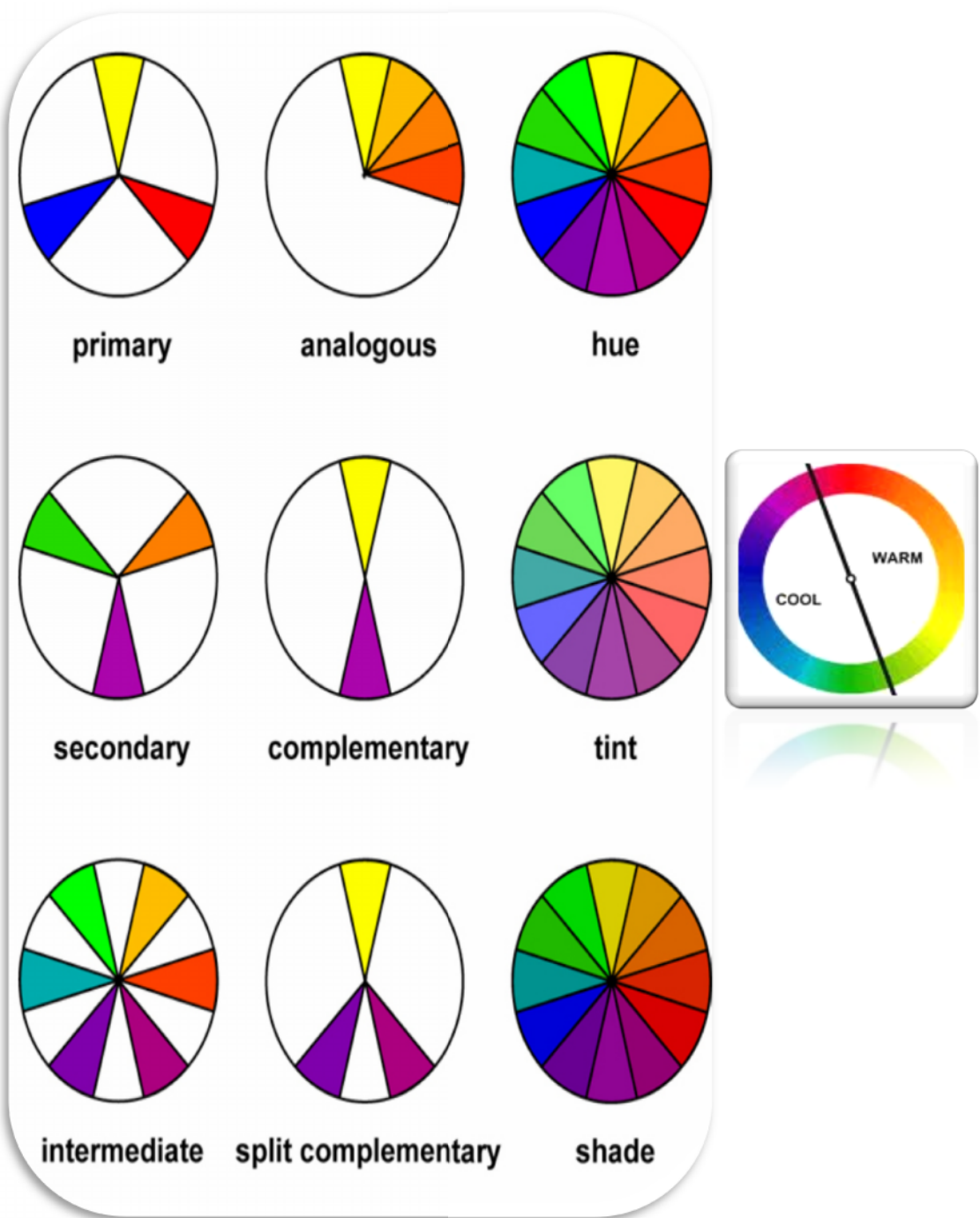


FIGURE: 1 Variation of colours

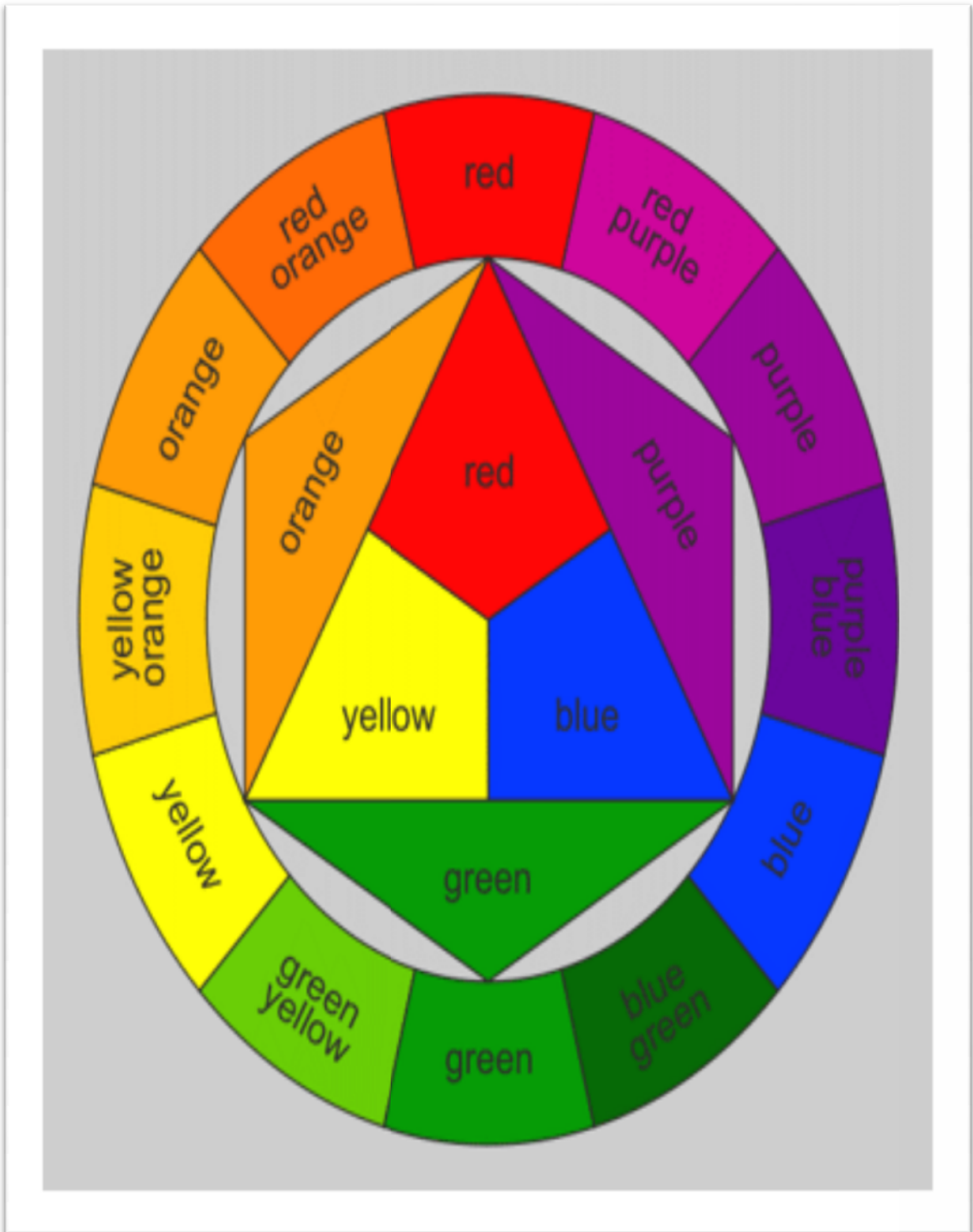


FIGURE: 2 Colour Wheel

2.5 Obese figure

Obesity is due to positive energy balance, the intake of calories is more than the expenditure of energy. One in every two adults in the United States is overweight and the prevalence of obesity is increasing all over the world (Srilakshmi, 2011). Proportion will be recalled that certain relationship between the various body area have been found to express satisfying proportion which are now regarded as standard. When parts of the human figure are longer or shorter, larger or smaller than is “standard” we say they are “out of proportion”. In such instance, special consideration must be given to the space and the line direction used if a pleasing individual design with its part in congruous relationship to be created. Color and texture are of importance chiefly in that sharp contrast in either make the figure more conspicuous and hence the deviation are more apparent (Sarkar,2010).

2.6 Fashion and Designing

Fashion is both art and science. It is a wearable art (Gibson,2012). Fashion is frequently used as a synonym for glamour and style. In their sense, fashions are a sort of communal art through which a culture examines its nation of beauty and goodness (Pudir,2007). Fashion essentially involves change, defines as a succession of short term or fads. It involves the exercise of creative design skills which results in product that range from the basic of the rare and elaborate (Easey and Wiley, 2009). Cloths convey hue to tone to the environment and give from to our feeling, which are the first and last word of the language is fashion (Patel and Gupta, 2003).

Designing refers to the total composition of lines , form, color, shapes, and texture in decorative manner. The designing activity of every, man is not a casual and simple process. On the higher level designing is a conscious and knowledgeable manipulation of the art element to product an expressive statement. It is a purposeful creation in which emotion, knowledge, imagination and intellect are operative.

2.7 Material

There are different types of materials used are explained about its history and properties of materials.

2.7.1 Cotton

The earliest cotton textile found at the site of Indus vally excavations can be reliable dated by 3000 B.C. cotton has been always associated with ancient India. Cotton is the kind

of the fabrics. Today cotton, despite the fact that modern focused breeding has produced significantly longer finer and stronger cotton (Trocme,2002).

2.7.2 Silk

Silk is also known as “the queen of the fabric’ owes its discovery to china. Silk was considered precious commodity in ancient civilization of Greece and Rome. Silk also paved the way from the man made industry which started with an attempt to produce expensive silk fabric. India has the distinction of cultivation all four commercially know varieties of silk namely tusser, mulberry, eri and muga. It is expensive and give luxurious look (Sekhri, 2011)

2.7.3 Silk cotton

Silk /cotton fabric is a blend of both fibers, combining positive characteristic of each into a single textile. A lightweight, silky and comfortable weave, silk cotton fabric has a soft hand-feel and a sturdy, silken drape, along with a versatility that makes it suitable for an extended variety of garment uses. Silk/cotton fabric is durable enough to be machine washed and hung dry, but dry cleaning is recommended (<http://www.nyfashioncenterfabrics.com>)

2.7.4 Crape

The word crape is also used as an Anglicized spelling of crepe. Crepe fabric is a fabric made of silk, wool, or polyester that has a gauzy texture and has a crisp and crimped appearance. It is commonly used in clothing and decorative fabric constructs. It comes in a multitude of colors. Crepe fabric is also known for its very twisted yarns in the weft and sometimes in the warp and or seam. Crepe fabric can be the right fabric for you to use for a number of occasions from costumes to decoration .(www.voguefabricsstore.com).

2.7.5 Synthetic

Synthetic fabric dry quickly and easily and does not go limp in the damp weather. This fabric has the absorption quality of cotton areas resistant quality of polyester and more comfortable to wear and easy to care (Sumathi,2004).

2.7.6 Netted :

Net is an open mesh fabric of rayon, nylon, cotton, or silk; made in a variety of geometric-shaped meshes of different sizes and weights for specific uses, like bridal veiling, bodice yokes and sleeves, crisp or soft gathered skirts, stiff layers beneath full skirts (crinoline). And in sarees for decorative purpose. These materials are light weight

(<http://www.habermanfabrics.com/fabric-glossary-2>). Net is created by connecting the intersections in a wove, knitted, or crocheted construction to form a mesh like appearance that won't ravel.(Brown,2004).

2.7.7 Jacquard

Jacquard fabric whose pattern has been woven in on a special loom rather than printed on the original loom was created by the trend inventor J.M.Jacquard (1757-1834) (Gross and Stone, 2002).

2.8 Surface embellishment

The surface of the fabric is embellished through various means as expressed under.

2.8.1 Patch and applique

Patch work is the term used when a fabric used for making a garments at furnishings is made by joining pieces or patches of fabrics. Applique work refers to pieces of fabric cut in geometric or novelty shapes to be applied in another fabric with proper edge finishing guiring, decorative look to the garment. The appliqué work can be made 3 dimensional with the use of padding under the appliqué patches. Applique work done on ladies & kids wear (Calto 1992).

2.8.2 Embroidrery

This is a fancy needle work or trimming using coloured yarns, embroidery floss, soft cotton, silk or metallic thread. It may be done by hand or sewing machine (Tortora, 2005).

2.8.3 Zardosi

The gold silverthread zariembroidery of OIndia, Zardizu, is the most out standing and one of the oldest types of embroidery. It was known as the Bharatkam of India. The embroidery requires the use of both hands because the wire is twisted into required shapes with the left hand and attached the material to the needle held in the right hand zari embroidery was known as zarika (Karu 2010).

2.8.4 Bead work

Bead is a piece of glass, plastic, wood, crystal, gem or other material border through the centre and strung on leather, cord, thread or chain used as jewelers. Other uses are for embroidery or ornamentation of a surface. Beads may be round, cylindrical, square, disk shaped, pendent shaped, and oblong. The beads are made from grooved animal teeth and

bones were probably worn as pendant. More often beads are strung onto threads and threads carrying the beads is sewn or couched to fabric (Tortora , 2005).

2.8.5 Laces

Laces are also openwork fabric made by looping knotting, braiding, twisting or stitching threads in an open and decorative work pattern. Lace making was a domestic art till the 7th century. Lace are made with types of yarns, such as cotton silk, & rayon with linen being restricted to expensive laces.

2.9 SARI

Of all kind of stitched and unstitched garment worn by the women, the sari is considered to be the more elegant. A typical sari is approximately 5.5 meters long and 1.3 meters wide (Roli and Janseen 2006).

2.9.1 History of sari

Although the exact origin of the sari is not known researchers have shown existence of sari is way back in 3000 BCV in the Indus Valley civilization (Kendra, 2008). Cloths wrapped around the body have been the basic of the dress of peoples all over the world for centuries (Drudi, 2007). Women in southern region of ancient India wore saris, sari is also called saree, sadee, seere, saris the translation for the Sanskrit word chitra “measurable length of cloths” (Barr, 2003).

2.9.2 Draping of sari

Of all kind of stitched and unstitched garment worn by the women, the sari is considered to be the more elegant. A typical sari is approximately 5.5 meters long and 1.3 meters wide (Roli and Janseen 2006). The sari is wrapped around the waist and pleats are positioned along the left leg. Then it is draped over the shoulder, wrapped one more time around the waist and tucked on the left side (Marwaha, 2011). Mostly Indian sari is graduated to fit all sizes and its draped around the body in many fabric, as an expensive length of silk, exquisitely woven with golden threads. The most decorative part is known as pallu (Somaiah and Zhuang, 2004). The blouse is tight, has sleeves of varying lengths and ends near the waist. The petticoat is full length skirt tied at the waist with a drawstring (Baneerji, 2003).

2.9.3 Variations of sari

Style in wearing sari used to vary from region to region. The sari had been worn at least 10-15 styles throughout the India, Gujarati, Bengali, Mangalore, Kannadiga, Kodava,

tamilian and malayali. Were various regional style of wearing sari. The length and quality of sari is varied from region to region. Sari is divided into three parts they are the longitudinal borders, the end piece, the field (Arora, 2008).

3. EXPERIMENTAL PROCEDURE

Experimental procedure pertaining to the study is discussed under the following headings

3.1 Conduction of Survey

- 3.1.1 Selection of Tool
- 3.1.2 Conduct of the study
- 3.1.3 Analysis of data

3.2 Standardization of Measurement

- 3.2.1 Selection of the sample
- 3.2.2 Body measurement for blouse
- 3.2.3 Standardization of body measurement

3.3 Nomenclature

3.4 Design development through manual sketching

- 3.4.1 Preparation of manual sketching
- 3.4.2 Evaluation and selection of manual sketching

3.5 Construction of Blouse and Sari

- 3.5.1 Selection and sourcing the material
- 3.5.2 Drafting
- 3.5.3 Alternating basic pattern
- 3.5.4 Layout transferring and cutting of material
- 3.5.5 Construction of blouse and sari

3.6 Trimmings and decoration

3.7 Evaluation of constructed garment

- 3.7.1 Visual inspection
- 3.7.2 Feedback through Self assessment

3.8 Cost estimation

3.1 Conduction of Survey

The steps involved for, conduction of survey are explained under.

3.1.1 Selection of Tool

Questionnaire is a device for securing answers to questions by using a form by which the respondents fill by themselves (Gupta, 2009). Questionnaire method was adopted for collection of data. The questionnaire was formatted in order to elicit information about overweight / obese adolescent girl's preference towards the selection of sari. This was pretested and modified as required. Thus finalized questionnaire was utilized for the survey. It is presented in Appendix – I.

3.1.2. Conduct of the Study

A good rapport was established with the adolescent girls. Then the information was collected from the respondents with the help of questionnaire.

3.1.3 Analysis of Data

The data after collection has to be processed and analysed in accordance with the outline laid down for the purpose at the time of developing the research plant. Technically processing implies editing, coding, classifying and tabulating the collected data, so that they are amendable to analysis (Gupta 2009). Thus the collected data was consolidated, tabulated and statistically analysed.

3.2 Standardization of Measurement

The steps involved to standardize the body measurements are expressed under.

3.2.1 Selection of the Sample

Sampling is a process of selecting a few (a sample) from a bigger group (the sampling population) to become the basic for estimation or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group. A sample is a subgroup of the population you are interested in (Kumar, 2005). Simple random sampling is the most simple procedure of drawing a sample from a given universe. In this sampling each unit has an equal chance of being selected. It is called an equal probability sampling. The process of selection is a random one but in practice we note that random sample usually is a representative sample and gives reasonably accurate data (Chaudhary, 2009). The investigator planned to adopt simple random method of sampling to gather information for the study as

careful selection of sample will give good result. Thus 25 obese adolescent girls were selected for the study .

3.2.2. Taking Body Measurements

Good fit is a combination of two components namely good fit and comfort although the concept of good fit varies depending on our different shapes and tastes. The first and the most important aspect for proper fit is the measurement (Sodhia, 2004). In order to construct garment that fits well, body measurements must be taken with precision (Mathews,1996). Hence the required body measurements of 25 obese adolescent girls were taken for the study. Various measurements taken are given in appendix –II figure – 3,4 and Plate. The measurements taken were as presented under.

- 1. Bust-** measurement was taken around the fullest part of the bust just under the arms and straight across the back, keeping the tape parallel to floor.
- 2. Waist** – measurement was taken around the waist line with the tape close, but not tight and parallel to floor.
- 3. Back width** – was taken from the back from arm hole to arm hole about 7.5cm below base of neck.
- 4. Blouse length** - was taken down from neck at the highest point of shoulder to desired length of blouse.
- 5. Sleeve length** – Measurement was taken from shoulder end to the desired length of the sleeve.
- 6. Sleeve circumference** – Measurement was taken around the bottom of the sleeve.
- 7. Armscye depth** – was taken from base of the neck at the center back point directly below it and in level at the bottom of arm where it joints the body.
- 8. Shoulder to Bust** – Measured down from the highest point of shoulder to tip of bust
- 9. Distance between bust points-** Measurement in horizontal direction, distance between two bust points.

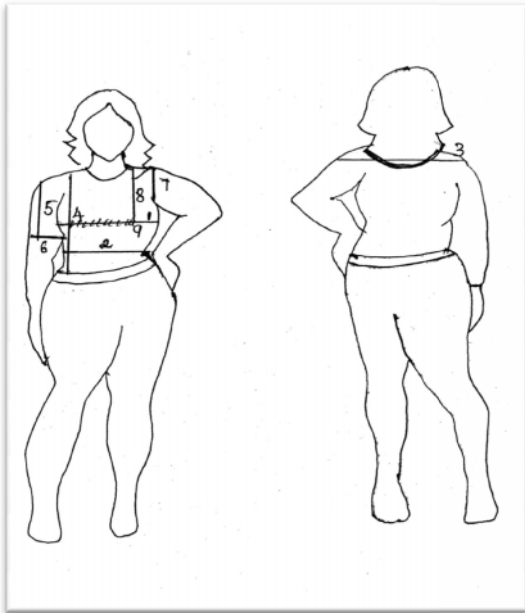


Figure-3

Figure-4

KEY:

1. Bust
2. Waist
3. Back with
4. Blouse length
5. Sleeve length
6. Sleeve circumfere
7. Armscye depth
8. Shoulder two bust point
9. Distance between bust point

Body measurements in Figure 3 and 4 (front and back).



Plate - I Body measurements

3.2.3 Standardization of Body measurements

Standard measurements are given set of measurements that comply with a commercial sizing. These measurements are a result of extensive anthropometric studies carried out on different age group height and girths (Saluja,2006). The mode of a distribution is the value of the point around which the item tends to be most heavily concentrated. Mode is defined as the variable which occurs the most frequently in a distribution. The mode in a distribution is that item around which there is a maximum concentration (pillai and Bagavathi, 2000).

Standardization of the body measurement is necessary to get a specific to the value which occurs most frequently. The body measurements were standardized by finding the model value by using the formula

$$Mo = L + \left(\frac{\Delta 1}{\Delta 1 + \Delta 2} \right) X C$$

Where,

L is the lower limit of the model class

$\Delta 1$ is the difference between the frequency of the model class and post modal class,

C is the class interval of the model class, A sample calculation of the model value is given appendix – III.

3.3 Nomenclature

The details of Nomenclature used in manual sketching is MS.

3.4 Design Development through manual sketching for sari

The designs were developed for the sari & blouse through manual sketching which were selected based on the adolescent girls preference.

Fashion illustration is the communicate of fashion that originated with illustration, drawing and painting. Fashion illustration has been around for nearly 500 years. Ever since cloths have been in existence and there has need to translate an idea or image into a garment there has been a need for fashion illustration. It shows the presence of hand and is said to be visual luxury (Kumar, 2010).

3.4.1 Preparation of manual sketching

MS-1 Obese Figure

The colour harmony followed for this design was tetradic. The tetradic colour scheme is rectangular and uses four colours arranged into two complementary pair. This rich colour scheme offers plenty of possibility for variation. This gives balance between warm and cool colours in the design. This design was further enriched by golden coloured lace at the border. A black coloured material was utilised for blouse. The curved lines depicting floral motifs as abstract pattern were expressed in the sari. The texture rendered was a heavy material.

MS-2 Obese Figure

The colours utilised for this design were taken from nature namely sky, mountain and sea. This prevents the clashing of hues. The circular motifs were included in the borders and palloos. The texture rendered was synthetic. The circular designs were alternated with big and small circles. As a contrast, square designs were given in the sleeve of the blouse.

MS-3 Obese Figure

Monochromatic colour scheme was followed with the shades and tints of same hue blue. Contrast light with dark colour in the colour scheme makes it look bold and three dimensional. This gives soothing and elegant effect. The horizontal liners were used to design the borders of the palloo and body portion of the sari at the bottom edge, zigzag lines were used. (Circular motifs were used inbetween the lines). Crape material was rendered. The blouse also was decorated with floral motifs.

MS-4 Obese Figure

The colour red expressed power determination and passion. It also expresses leadership quality. This warm colour is subsided by the neutral colour black. Which gives a fading perspective and depth. The curved lines expressing creepers were used in the design. Red creepers on black back ground and black creepers on red background. Tassels with beads were used for the blouse designs. The texture crape was rendered in the design.

MS-5 Obese Figure

The cool colour violet was used in the design and the depth of the colour was subsided by the opaque and warm colour mustard on the palloo. The texture rendered was netted material which itself had diagonal lines running all over and so on special design was incorporated. The sleeve of the blouse was a petal sleeve.

MS-6 Obese Figure

Orange represents enthusiasm, happiness and creativity. It is the symbol of strength and endurance. The orange colour is used in the sari as a plain back ground which is decorated with patch work using blue. This blue colour expresses ability and depth to the design. The curved lines were used for the patch work. The material rendered was synthetic for the orange and netted for the blue colour.

MS-7 Obese Figure

Direct complementary colours namely Red & Green were used for this design applique design was used for creating decorative appearance at the border Palloo. The blouse sleeve edge was also decorated with applique. The curved floral motifs were used for decoration. The texture rendered was silk cotton fabric.

MS – 8 Obese Figure

The shades of green in the sari express calm and soothing effect as it is associated with nature. This also depicts prosperity. The pink colour depicts femininity, expresses happiness and is used in the borders, which is alternated with green. As a contrast for the curved flowers at the borders, the blouse was designed with straight lines. The texture rendered was crape on which the lace was of synthetic material.

MS-9 Obese Figure

The violet colour comprises of the mixture of blue and red which appears very dark. The colour is associated with luxury. The lines used for decoration were curved lines. It was the thread work at the bottom, palloo and pleat portions.

MS-10 Obese Figure

The dark blue green colour on the sari gives more depth to the design. The dark pink shade in the borders and pleats emphasise the design. The texture rendered was crape. The lines introduced at the borders were geometric patterns.

MS-11 Obese Figure

The tri coloured effect was brought in the sari. The warm colours namely red yellow were used in the sari and to subside the warmth a cool colour green was also used. Green can be denoted by both warm and cold colour. The designs alone on the sari were such that bottom of the sari was decorated with patches giving an illusion of godets. Further the space

in between the patch work was given a golden coloured curves to enrich them. The material rendered was crape.

MS-12 Obese Figure

The brown colour in this sari seemd to be earthy and practical. The cream colour in the border and for the pleat emphaze the brown. The amaeboid designs were incorporated in the body as well as the borders. In contrast checked blouse was designed for this sari design. The texture rendered was synthetic.

MS- 13 Obese Figure

The cool colour blue was used in this design which depicts art and culture. The red coloured lines running on this plain background with golden zari emphasies it. Emphasis is brought in the sari through the lines on plain background.

MS – 14 Obese Figure

The dream colour pink in the palloo and pleats expresses a sort of bonding which is enhanced by the healing colour Blue. A spiritual gift of intuition is also added by the silver coloured motifs on the paloo. Through the silver colour, the body and the palloo are emphasized on plain pink background. The material rendered was the crushed cotton.

MS – 15 Obese Figure

Secondary hues namely green, violet and orange were used for which design this carries fresh and lifting quality. The orange coloured circles in progression emphasized the green colour on the sari. The texture rendered was synthetic.

MS – 16 Obese Figure

The tints of yellow and red were used in the sari design. The floral motifs on lace material was rendered. The three fourth sleeve with frills attachment was designed. The borders were designed with frills.

MS – 17 Obese Figure

The red dashing colour along with neutral black was used for this design. The red portion of sari was rendered with black beads and the black portion of the sari was designed with embroidery black thread. The blouse was designed with a rough texture. The sari was rendered with crape material. The edges of the palloo portion was decorated with beads.

MS -18 Obese Figure

The silver colour symbolizes richness and wealth. The gold depicts wisdom and power. Hence these two colours were produced royalty. The bottom was a golden colour with silver round motifs and the silver pallu was given a horizontal line and borders were of floral designs. The edge of the pallu was scalloped with vertical lined patterns. The blouse sleeve was designed such that it has scallops in it.

MS – 19 Obese Figure

In this the colour used for this design was purple. The purple is a lighter shade of violet and is a cool colour. The material used was heavy material with floral design with rose and yellow colour and dark purple netted material also was used. Golden and purple lace is attached and mango motifs are attached. And decorative hangings were used at the edges.

MS- 20 Obese Figure

The cool colours namely violet and blue were used in this sari. The texture rendered was silk cotton. The mid portion of the pallu was left with light blue and on either side dark blue materials were used for rendering.

MS-21 Obese Figure

Orange is vibrant and a colour of joy and creativity. Green is a relaxing colour for human eyes to view. Silver lace is attached at the border in the front portion alone. The green colour at the centre is emphasized by the orange colour on either side. The texture rendered is silkcotton.

MS-22 Obese Figure

The warm colours namely orange, pink and tint of yellow were used in the sari. The orange coloured material at the centre was emphasized with concentric circles using black colours. The size was in progression. The texture rendered was synthetic.

MS – 23 Obese Figure

In this sari design, the colour used was yellow and violet. This is a direct complementary colour. Yellow is a warm colour and violet is a royal colour which denotes luxury. Black is a neutral colour. In this sari to emphasize black colour floral lace was used. The material preferred for this sari was crepe. Repeated floral motifs were used in the sari. Crush material was used for blouse and black and violet lace was attached.

MS – 24 Obese Figure

Rather light blue colour in the sari expresses the sky. The silvery white colour was used for the surface embellishment on the borders, palloo and the whole body of the sari. To enhance the beauty hanging beads were attached. The texture rendered was crape.

MS – 25 Obese Figure

The warm colours namely yellow, red and tint of red – pink were used in this design violet flowers on the yellow back ground brings down the warmth in the sari. The texture rendered was silk cotton. (Plate –II)



MS 1 Obese figure



MS 2 Obese figure



MS 3 Obese figure

Plate II – (a)



MS 4 Obese figure



MS 5 Obese figure



MS 6 Obese figure

Plate II – (b)



MS 7 Obese figure

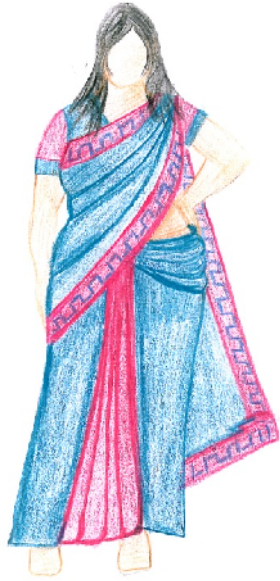


MS 8 Obese figure



MS 9 Obese figure

Plate II – (c)



MS 10 Obese figure



MS 11 Obese figure

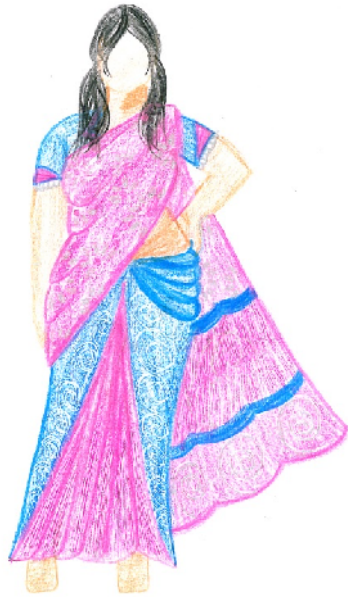


MS 12 Obese figure

Plate II – (d)



MS13 Obese figure



MS14 Obese figure



MS15 Obese figure

Plate II - (e)



MS16 Obese figure



MS17 Obese figure



MS18 Obese figure

Plate II – (f)



MS19 Obese figure



MS20 Obese figure



MS21 Obese figure

Plate II – (g)



MS22 Obese figure



MS23 Obese figure



MS24 Obese figure

Plate II – (h)



MS25 Obese figure

Plate II – (i)

3.4.2 Evaluation and selection of manually sketched designs

The designs were ranked according to the preference of the subject by displaying the manually sketched design of sari & blouse for obese adolescent girls. From their preference of top 7 designs were selected for further study.

3.5 Construction of sari & blouse

The designer wear sari and blouse were constructed by the following steps.

3.5.1 Selection and sourcing of material

According to selected design fabrics procured from their respective shops as per the requirements. According to the design trimmings and decorations involved also varied.

3.5.2 Drafting

Drafting enhance the accuracy of cutting, stitching and fitting when worn. It is one of the important steps in achieving good fitting of a garment (patil *et al.*, 2001). The paper patterns were prepared for blouse based on standardized measurements. The instruction followed as per Zarapkar (2011) for elevating bodice front, bodice back, sleeve pattern have been presented. Appendix V and VI

3.5.3 Altering of basic pattern

The basic pattern was altered according to the required designs for blouse neck line, sleeve and blouse length for decorative purpose.

3.5.4 Layout, transferring and cutting of the material

Trial layouts were made by keeping weight or pins per pattern to make sure that the cloth would be sufficient. Straight grain line on pattern was kept parallel to the fabric selvedge. To ensure this, the pattern was measured, adjusted and planned on the fabric as suggested by saliya (2006).

Seam allowances width vary with the type of garment. Basic seams for example: side seam, style seams-1 to 1.5 cm. Enclosed seams for cuffs-0.5 cm depth and decorative seams usually required more seam allowance no seam allowance is required on the fold line. It is important that seam allowances added to the pattern are accurate and clearly marked (Aldrich, 2003).

Accordingly, the patterns were placed on the fabric in the most economical way. Adequate seam allowance was left for each piece of the fabric. The pattern details such as seam line, grain line, name of the pattern and cut number were marked on the fabric. Enough material was left for cutting decorative and piping.

The drafted and altered patterns were transferred using different tools namely tailors chalk and tracing wheel suitable for various materials(cotton, satin, brasso, crepe, netted and synthetic).After transferring the fabric were cut accordingly with seam allowance.

3.5.5 Construction of blouse and sari

Every design compared of different element –dot, line, shape, value, colours and texture. These elements of design may be used on a garment in a elements were used in the construction of the garment such as seams, tucks, darts, pleats and hem line.

3.6 Trimming and decorations

The items which are used for decorating the garments are known as trimming materials. Some of the trimmings are embroidery, painting, smocking, honey, honeycomb, darts and pleats. Some of the ready made trimming are purchased from the market like lace, ribbon and flower (Verma., 2003)

Trims are an interrelated part of garments design, may be decorative and functional. Decorative Trims are selected and applied to enhance the aesthetic appeal of garment but not essential to garment function and preference functional trims are an integral part of garment structure and use(Ruth and Grace.,2011).

Hence suitable trims &decorative were incorporated in the blouse and saris. Plate – III



MS 1 obese figure



MS 7 Obese figure

Plate - III (a)



MS 9 Obese figure



MS 13 Obese figure

Plate - III (b)



MS 16 Obese figure



MS 19 obese figure



MS 24 Obese figure

Plate - III (d)

3.7 Evaluation of constructed garment

The constructed garments were evaluated in two ways as explained under.

3.7.1 Visual Inspection

Visual inspection was made for the garments by 10 judges belonging to post graduate Textiles and Fashion Apparels of Avinashilingam university, Coimbatore. The aspects considered for evaluator were the proforma used for the assessment is presented in Appendix –VI.

3.7.2 Feed back through self assessment

The self assessment by the subjects garments was made on the blouse & draping the sari. This was to be evaluated for salient features about good fit namely ease, line, grain, set, balance, design, colour combination, Trimmings and decoration and overall appearance. The proforma used for this has been presented as Appendix - VII

3.8 Cost estimation:

The cost of constructed sari were calculated and recorded Table - VII

4. RESULTS AND DISCUSSION

The obtain results are discussed under the following headings

4.1 Survey to the obese adolescent girls.

4.1.1 Awareness and means of awareness about designer wear sari

4.1.2 Identification of discomforts in wearing sari

4.1.3 Adquancy of sari length and width

4.1.4 Identification of material discomforts

4.1.5 Preference for duration of wear

4.1.6 Preference of material for designer wear sari

4.1.7 Preference of colour

4.1.8 Preference of surface enrichment

4.1.9 Preference for style of drape

4.1.10 Preference of net design for blouse

4.1.11 Preference for decorations of blouse

4.1.12 Preference for sleeve length

4.1.13 Preference for blouse cutting related grain.

4.2 Consolidated rating of manual sketching

4.3 Visual inspection of constructed garments or samples.

4.4 Feedback through self assessment

4.5 Cost estimation

4.1 Survey to the obese adolescent girls

The results obtained from the survey made among the obese adolescent girls are presented and discussed under the following headings.

TABLE-I

Awareness and means of awareness about Designer Wear Sari

Awareness status						
Yes (%)						No (%)
News Papers	TV	Net	Dir	PL	Total	
20	6	10	48	4	88	12

From the Table – I it is clear that among the obese adolescent girls surveyed, about 88 percent had awareness about the designer wear sari. As for the means of awareness of the designer wear sari, the maximum of 48 percent of the respondents expressed that through direct conversation they obtained the awareness followed by 20 percent of the respondents though newspapers, 10 percent and 6 percent through Net and TV respectively .Through other means like notice and banners,& pamphlets & circulars only 4% of the respondents acquired their awareness.

Thus the maximum awareness was created by direct conversation through friends& relatives.

Awareness and means of awareness about Designer Wear Sari

Figure - 5

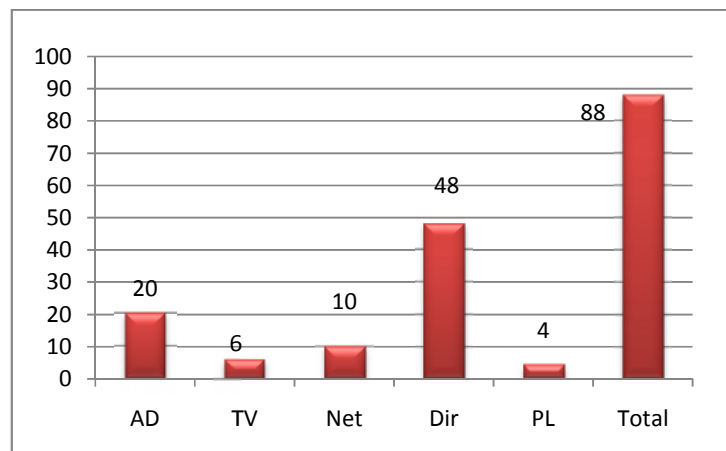


TABLE –II

Identification of Discomfort by Wearing Sari

Discomfort				
Yes %				NO %
Time consuming	Lesser freedom of movement	Body exposure	Total	
10	28	14	52	48

From the Table-II, it is obvious that higher of (52 percent) respondents expressed that wearing sari created discomfort than the respondents (48 percent) who said it was comfortable. The discomforts expressed by them were due to the lesser freedom of movements by 28 percent followed by 14 and 10 percentages of respondents who expressed that they felt discomfort due to body exposure during wear & more time consumption for wearing sari.

Hence it could be concluded that the maximum respondents expressed that they had discomforts in wearing sari.

Identification of Discomfort by Wearing Sari

Figure-6

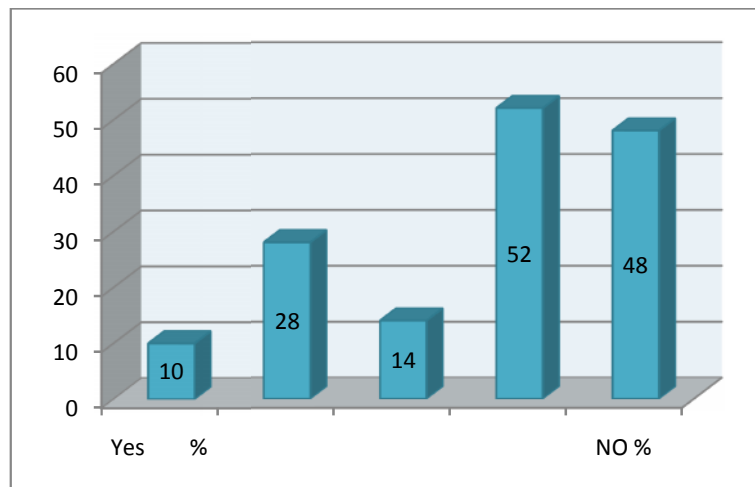


TABLE – III

Adequacy of sari length and width (%)

S.NO	DETAILS	YES	NO
1.	Length	32	68
2.	Width	48	52

From the Table III it is clear that more respondents of 68 percent expressed that the length of the sari was not adequate for them. In the case of width also higher percentage of the respondents expressed that the width was not adequate for them. They also expressed that they managed the length and width by attaching a piece of suitable material.

Hence it could be concluded that more respondents expressed that the length and the width of the saris purchased were not adequate for them.

Adequacy of sari length and width (%)

Figure-7

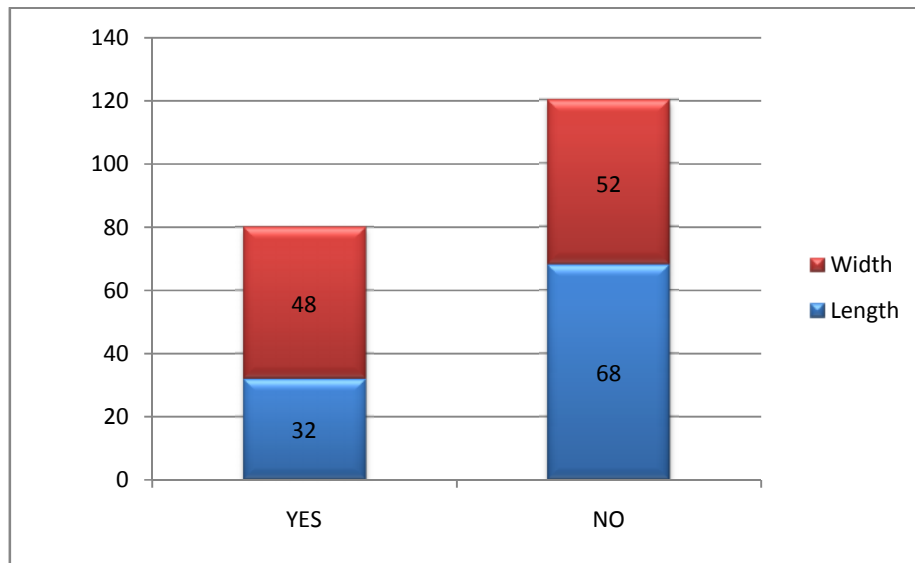


TABLE – IV

Identification of Material Discomfort (%)

Material Discomfort						
Yes						No
Cotton	Silk	Crape	Netted	Synthetic	Total	
34	1	1	2	2	40	60

From the Table – IV it is clear that 60 percent of the respondents expressed that there was no discomfort in the materials used for sari whereas only 40 percent of the respondents expressed discomforts in the materials namely cotton (34 percent), silk(1percent) ,crape(1percent) , netted (2percent) and synthetic (2percent). The preference of the respondents was not to cotton material because of the stiffness which made them look stouter as per their expression.

Hence it could be concluded that more discomforts were found in stiff cotton materials over other materials.

Identification of Material Discomfort (%)

Figure-8

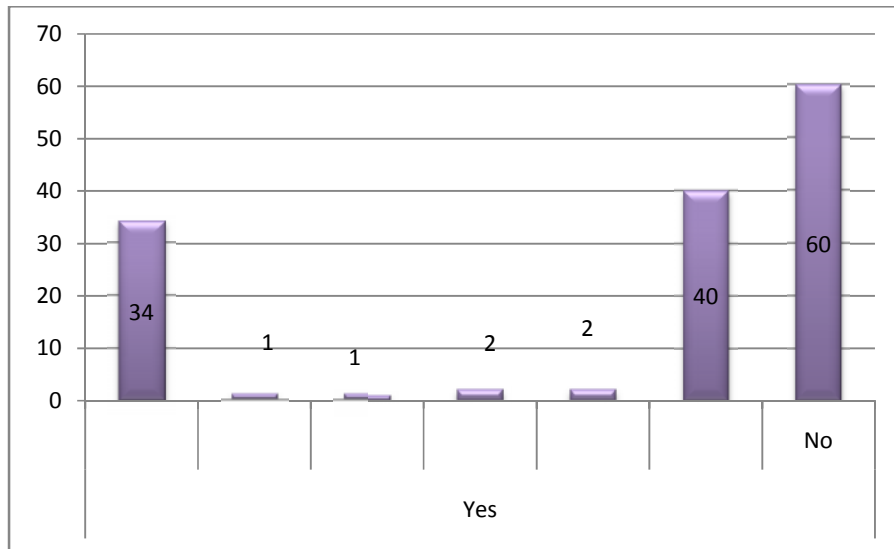


TABLE - V

Preference for Duration of Wear (%)

S.NO	Hours of Wear	Preference
1	2	12
2	3	12
3	4	16
4	5	12
5	More than 5	48

From the Table - V it is clear that 48 percent of respondents preferred to wear sari for more than 5 hours.

Hence it could be concluded that most of the respondents did not mind wearing sari for longer hours though they had some discomforts.

Preference for Duration of Wear (%)

Figure- 9

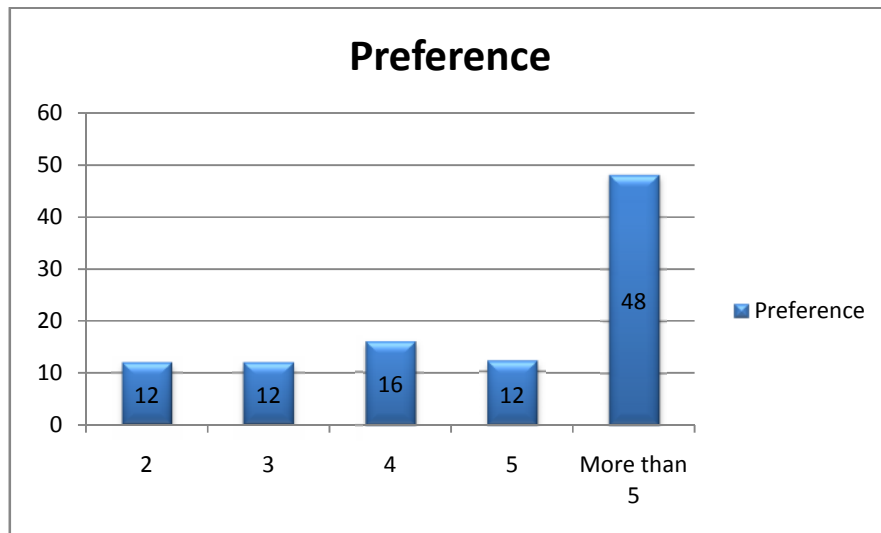


TABLE VI

Preference of Material for designer Wear Sari (%)

S.NO	Materials	Preference
1	Synthetic	24
2	Cotton	4
3	Crape	14
4	Silk cotton	24
5	Heavy / fancy materials	34

From the Table - VI it is clear that the maximum respondents of 34% preferred heavy fancy materials followed by 24% for both synthetic and silk cotton materials 14% for crape and 4 percent for cotton material.

Hence it could be concluded that the maximum respondents preferred heavy fancy materials.

Preference of Material for designer Wear Sari (%)

Figure-10

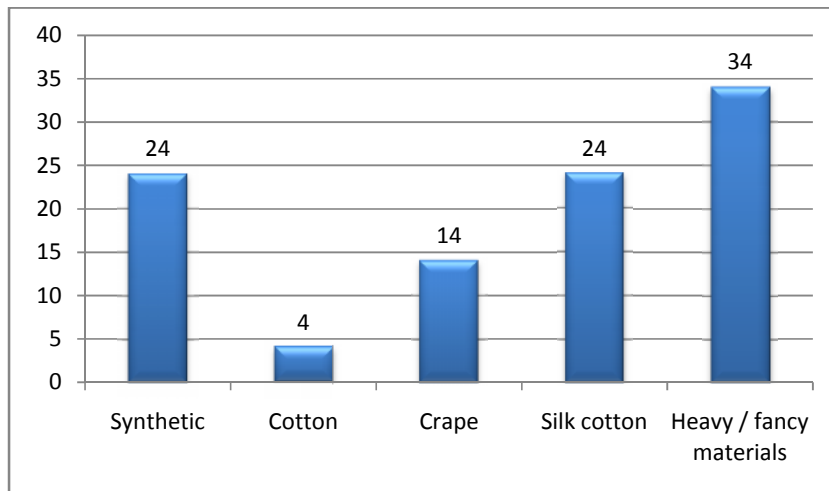


TABLE VII

Preference of colors

S.No	Details	Light Colors					Dark Colors					
	Color	Pink	Blue	White	Purple	%	Blue	Black	Purple	Violet	Red	%
01	Preference rate	16	22	2	4	44	8	8	4	20	16	56

From the Table – VII it is clear that more respondents (56 percent) preferred dark colors than the respondents who preferred light colors (44 percent). Among the preference made for dark colors, the most preferred one was red (16percent) and among the preference made for light colors, the most preferred was blue color (22percent).

Hence it could be concluded that the obese adolescent girls preferred dark colors for their sari.

Preference of colors

Figure-11

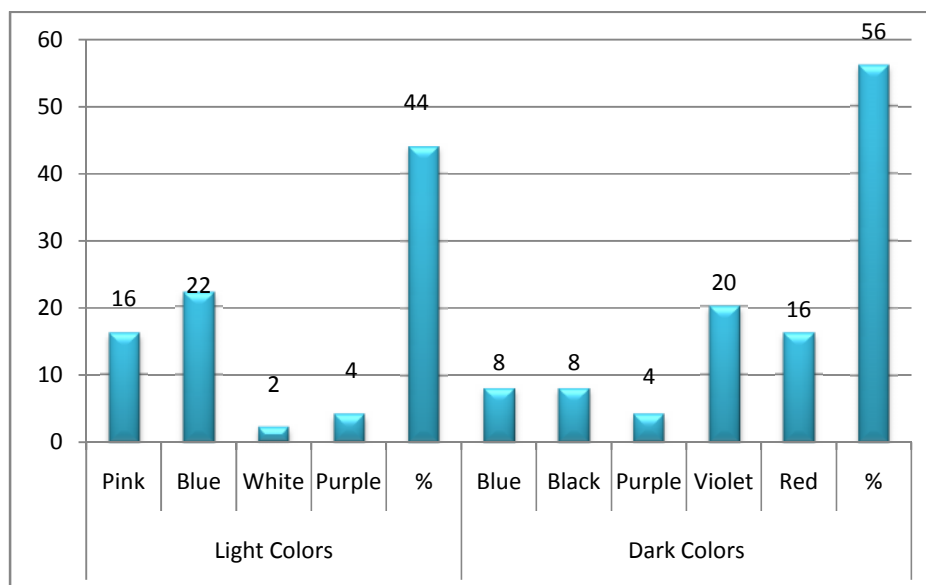


TABLE VIII

Preference for surface enrichment (%)

S.No	Details	Preference
1	Embroidery	16
2	Applique	20
3	Patch	24
4	Zardoshi	32
5	Bead & Stone	8

From the Table -VIII it is obvious that the maximum respondents 32 percent preferred zardoshi work followed by patch work, appliqué, embroidery and bead/ stone works of 24 , 20, 16 and 8 percentages respectively.

Hence it could be concluded that most of the respondents preferred zardoshi for surface enrichment.

Preference for surface enrichment (%)

Figure-12

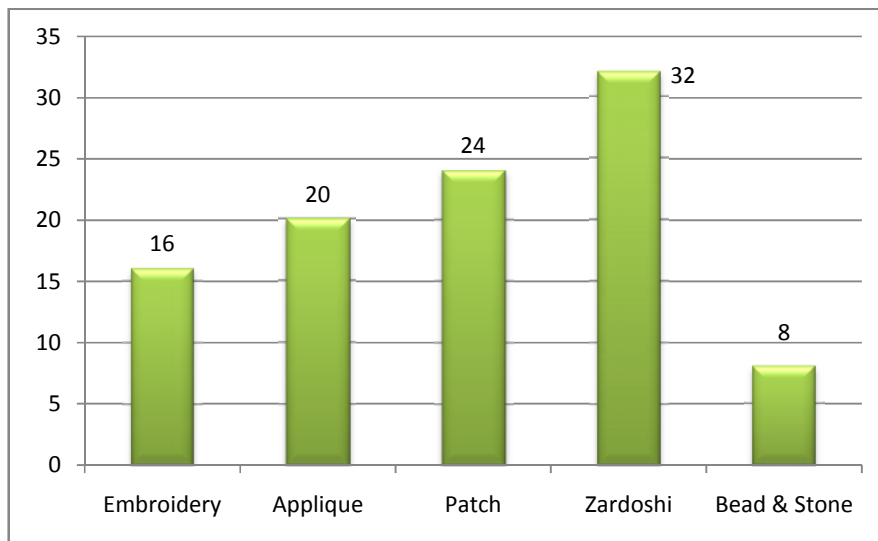


TABLE IX

Preference for style of drape (%)

Pleats				Floating
4	5	More than 5	Total	
8	40	20	68	32

From the Table - IX it is clear that more respondents (68 percent). Preferred to drape sari with pleats of which it was the maximum of 40 percent for 5 pleats,20 percent for more than 5 pleats & only 8 percent for 4 pleats than the respondents who preferred to drape in simple floats (32 percent) without pleats.

Hence it could be concluded that more obese adolescent girls preferred to drape sari with pleats.

Preference for style of drape (%)

Figure-13

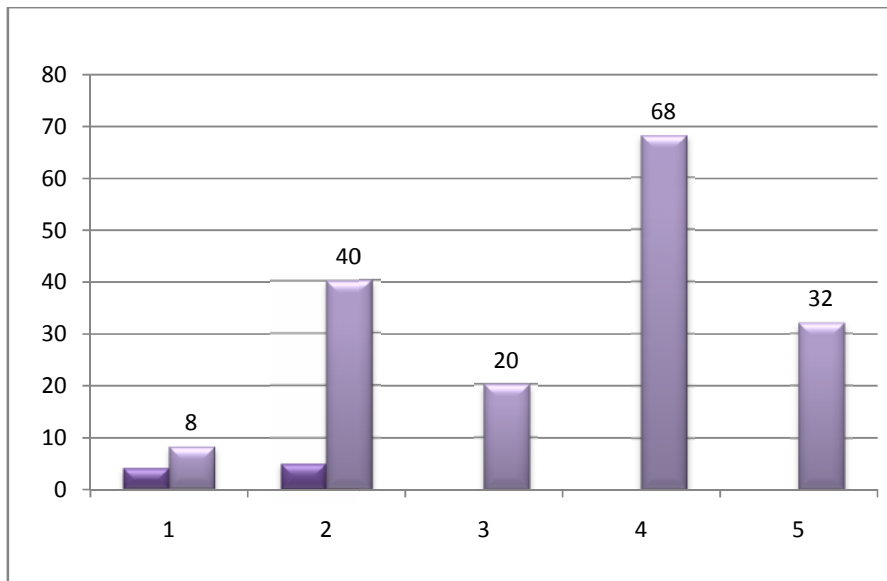


TABLE X

Preference of Neck design for blouse (%)

S.No	Type	Preference
1	U neck	48
2	V neck	4
3	Square neck	20
4	Scallopped neck	16
5	Other	12

From the Table - X it is obvious that the maximum of 48 percent of the respondents preferred to have U-neck followed by square and scallopped neck designs with 20 & 16 percentages respectively. The V-neck was preferred only by 4 percent of respondents whereas other neck designs namely step neck & mango neck design were preferred by 12 percent of the respondents.

Hence it could be concluded that most of the obese adolescent girls preferred U-neck design.

Preference of Neck design for blouse (%)

Figure-14

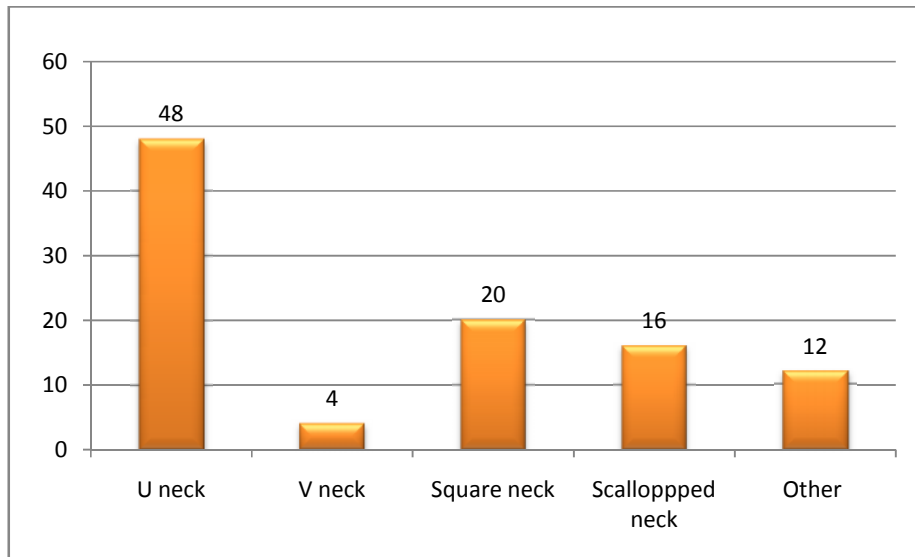


TABLE XI

Preference for decoration of blouse

S.No	Decoration	Preference
1	Border	12
2	Piping	36
3	Embroidery	38
4	Cording	14
5	Printing	Nil

From the Table - XI it is clear that the maximum of 38 percent of the respondents preferred embroidery in their blouse followed by piping, cording & borders with 36, 14 and 12 percentages respectively. Printing design was not opted by them.

Hence it could be concluded that most of the respondent's preference was to have embroidered designs in their blouses.

Preference for decoration of blouse

Figure-15

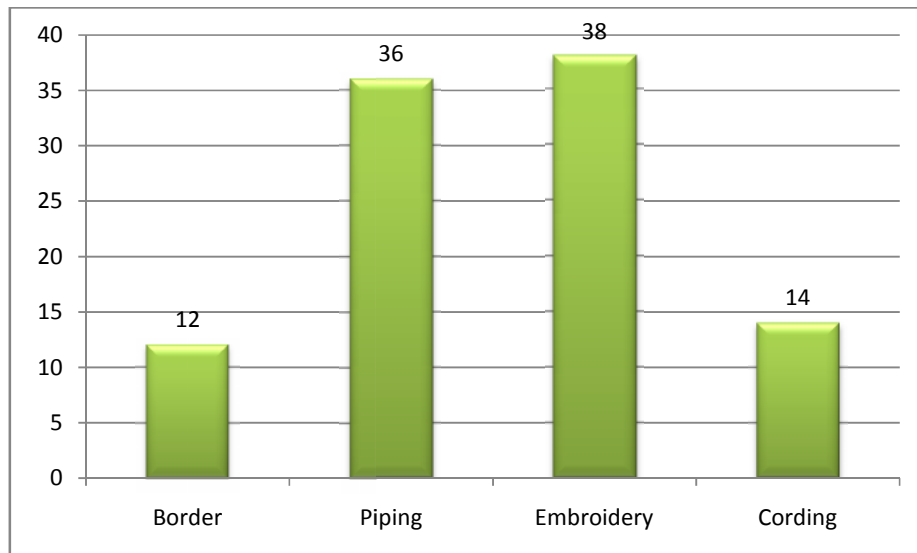


TABLE XII

Preference for sleeve length

S.No	Sleeve length	Preference
1	Half	40
2	Three fourth	8
3	Sleeveless	Nil
4	Short sleeve	44
5	Full sleeve	8

From the Table -XII it is clear that the maximum respondents (44 percent) preferred to have short length for the sleeve in their blouses followed by half length. Full and three fourth lengths in the sleeve were preferred by equal respondents of 8 percent.

Hence it could be concluded that the maximum obese adolescent girls preferred to put on blouse with short sleeve length.

Preference for sleeve length

Figure-16

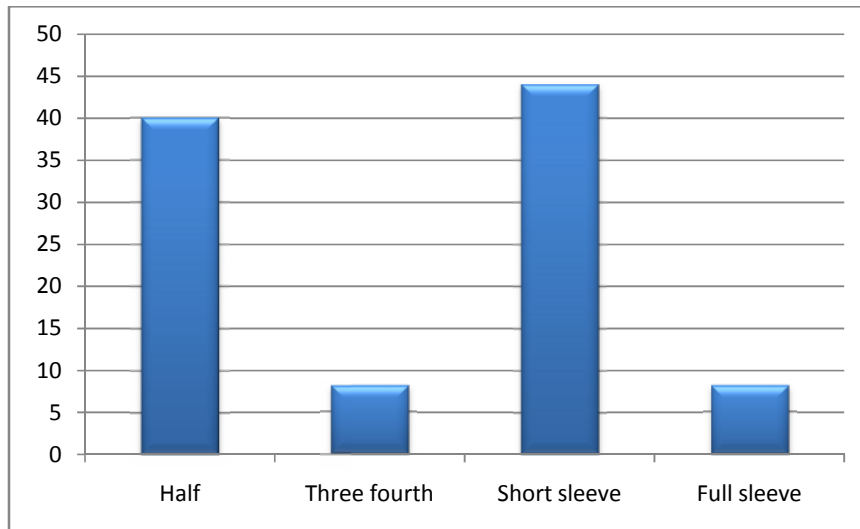


TABLE XIII

Preference for blouse cutting related to grain.

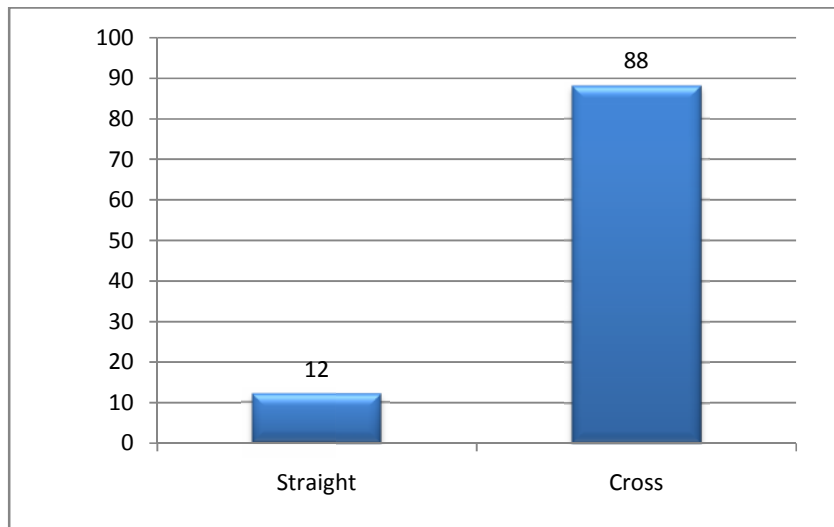
S.No	Blouse cutting	Preference
1	Straight	12
2	Cross	88
3	Cattori	Nil
4	Choli	Nil

From the Table -XIII it is clear that the maximum of 88 percent of the respondents preferred cross cut blouses whereas only 12 percent of the respondents preferred straight cuts.

Hence it could be concluded that the most preferred cut was cross cut for the blouse.

Preference for blouse cutting related to grain.

Figure-17



4.2 Consolidated rating of manual sketching

Consolidated rating of manual sketching are represented under the Table – XIV

TABLE XIV
CONSOLIDATION RATING OF MANUAL SKETCHING FOR
GENERAL APPEARANCE

S.NO	DESIGN CODE	EXCELLENT	GOOD	FAIR
1	MS1	96.6	3.4	-
2	MS2	76.6	23.4	-
3	MS3	66.6	30.0	3.4
4	MS4	83.4	16.6	-
5	MS5	70	30	-
6	MS6	83.4	10.0	6.6
7	MS7	93.2	6.8	-
8	MS8	80	20	-
9	MS9	97	3	-
10	MS10	66.6	30.0	3.4
11	MS11	73.3	26.7	-
12	MS12	76.6	20.0	3.4
13	MS13	93.2	3.4	3.4
14	MS14	86.6	10.0	3.4
15	MS15	88.4	16.6	-
16	MS16	94	6	-
17	MS17	76.6	16.6	6.8
18	MS18	83.4	16	4
19	MS19	92.3	7.7	-
20	MS20	90.0	10.0	-
21	MS21	80	13.9	6.6
22	MS22	83.4	10.6	-
23	MS23	76.6	23.4	-
24	MS24	98	2	-
25	MS25	79	14	7

From the Table No: XIV, it is obvious that the maximum rating of 98 percent was noted in sample MS24 to be excellent for general appearance followed by samples MS9 (97 percent), MS 1 (96.6 percent), MS 16 (94 percent), MS 7 and MS13 (93.2 percent), MS 19 (92.3 percent), MS 20(90 percent), MS 14 (86.6 percent), MS4, MS6, MS15, MS18 and MS22 (83.4 percent). The designs namely MS2, MS5, MS11, MS12, MS17, MS21, MS23, MS25 were rated by 70-80 percent of judges to have excellent general appearance. And the designs MS3 and MS10, were rated below 70 percent to have excellent appearance. Hence it would be concluded that seven of the design namely MS1, MS7, MS9, MS13, MS16, MS19, MS24 had excellent general appearance.

4.3 VISUAL INSPECTION OF SARI AND BLOUSE

The visual Inspection of Sari and Blouse is presented under the Table – XV

TABLE – XV

S. No	Garment Code	Design			Colour Selection			Trimmings and decoration			Overall appearance		
		Ex	VG	F	Ex	V G	F	Ex	VG	F	Ex	VG	F
1	MS1	100			100			90	10		100		
2	MS7	90	10		80	20		90	10		90	10	
3	MS9	90	10		80	20		100			100		
4	MS13	60	40		70	30		70	30		80	20	
5	MS16	60	40		70	30		70	30		80	20	
6	MS19	80	20		90	10		90	10		90	10	
7	MS24	80	20		90	10		90	10		80	20	

EX – Excellent

VG – Very Good

F – Fair

From the Table - XV it is clear that cent percent judges expressed that the design was excellent in sample MS1 followed by both the samples M7 and M9 with 90 percent, MS 24 and MS19 with 80 percent and MS13 and MS16 with 60 percent.

As far as the colour selection in concerned the maximum ratings for excellent was given to the sample MS1 (100%) followed by samples MS19 and MS24 with 90 percent, MS9 and MS7 with 80 percent and MS16 and MS13 with 70 percent.

As for the timmings and decorations, the maximum judges expressed these to be excellent in sample MS9 followed by the samples MS24, MS9, MS7 and MS1 with 90 % and samples. MS16 and MS13 with 70%.

The overall appearance was found to have highest ratings in both the samples MS9 and MS1 cent percent followed by the samples MS19 and MS7 90 percent and samples MS13, MS16 and MS24 80%.

Hence it could be concluded that the sample MS1 seemed to be the best of all the sample.

4.4 Feed back through self assessment

TABLE - XVI

The Feedback through self assessment was presented under the Table : - XIV

S.No	Garment code	Ease		Line		Grain		Set		Balance		Design		Colour Selection		Overall appearance	
		Ex	V.G	EX	V.G	Ex	V.G	EX	V.G	Ex.	V.G	Ex.	V.G	Ex	V.G	Ex	V.G
1	MS1	100		100		100		100		100		100		100		100	
2	MS7	100		100		100		100		100		100		100		100	
3	MS9	100		100		100		100		100		100		100		100	
4	Ms13	100		100		100		100		100		100		100		100	
5	MS16	100		100		100		100		100		100		100			100
6	MS19	100		100		100		100		100		100		100		100	
7	MS24	100		100		100		100		100		100		100		100	

EX – Excellent

VG – Very Good

From the Table XVI, it is clear that the self assessment obtained from the wearers for all the samples namely MS1, MS7,MS9, MS13, MS19, MS24 expressed to have excellent ease, line, grain, set, balance, design and colour selection. The overall appearance also was expressed as excellent except the sample MS16.

Hence it could be concluded that all the constructed samples were comfortable to wear.

4.5 Cost estimation

The cost estimation is presented in Table

TABLE – XVII
COST ESTIMATION

S.No	Garment Code	Particulars	Cost (₹)	Total Cost (₹)
1	Ms1	Material cost	2,520.00	4,280.00
		Trimming and Decorations	960.00	
		Stitching Charge	800.00	
2	MS7	Matrial Cost	1800.00	3,800.00
		Trimmings and Decorations	600.00	
		Stitching charge	1400.00	
3	MS9	Material Cost	2,000.00	6,000.00
		Stitching Charge	4,000.00	
4	MS 13	Material Cost	600.00	2,700.00
		Trimmings and Decorations	1,300.00	
		Stitching charge	800.00	
5	Ms 16	Material Cost	3,090.00	3,990.00
		Trimmings and Decorations	300.00	
		Stitching charge	600.00	
6	MS19	Material Cost	2,942.00	5,942.00
		Trimmings and Decorations	2,300.00	
		Stitching charge Ma	700.00	
7	MS24	Material Cost	1400.00	6,900.00
		Trimmings and Decorations	1500.00	
		Stitching charge	4000.00	

From the Table – XVII, it is clear the cost incurred for material, designing and construction for the samples namely MS1, MS7, MS9, MS13, MS17, MS19 and MS24 were ₹ 4,280.00, ₹ 3,800.00, ₹ 6,000.00, ₹ 2,700.00, ₹ 3,990.00, ₹ 5,942.00 and ₹ 6,900.00 respectively.

Hence it could be concluded that the cost of constructed designer wear sari and blouse range from ₹ 2,700.00 to 6,900.00.

5. SUMMARY AND CONCLUSION

Although these materials items may be elaborately decorated, for the most part these items are utilitarian valued not just for their beauty but for their usefulness as well. Clothes are part of our life, in book of genesis, Adam and Eve, the first human being, realized that they are naked and made clothing for themselves out of fig leaves. Clothing is very ancient technology of fiber and textile materials worn on the body and it is one among the most important three basic needs in every human being. The earliest covering for both men and women were probably simple loin cloths which were supplemented by large skins used as blankets in inclement weather. Later in colder climate skins were sewn together in simple tunics to provide more warmth. After, ancient people learned to pound the fibers of the flax plant into thread to make linen.

During the period, Squares of cloth direct from loom and without being cut were draped around the body. With role of time comforts, irrespective of climate, season, environment, culture and society become a part of clothing

Design involves basic elements like line, form, shape, color, rhythm, unity and space. A well designed garment has beauty and appropriateness which makes it suitable for the wearer and for the occasion. Fashion is the prevailing mode which cannot be ignored, but which can seldom be used as a guide for attractive cloths for every one. Fashion forecasting is the more important for designer.

Although the word 'sari' now has general usage throughout India, it is a modern term that was not frequently used before twentieth century. Today the most common style in for the sari to be wrapped around the waist, with the loose end of the drape worn over the shoulder. Sari became the traditional dress of India. Underneath the sari, one wears a petticoat, a waist to floor length skirt tied tightly at the waist by a drawstring; and a choli, a blouse that ends just below the bust. The sari is 5 to 6 yards in length.

Considering the above facts, the investigator decided to take up a study on "DESIGNING AND DEVELOPING INNOVATIVE SARI AND BLOUSE FOR OBESE ADOLESCENT GIRLS" with the following objectives.

- To understand the preference of sari among obese adolescent girls
- To design and prepare innovative designer sari for obese adolescent girls
- To assess the prepared sari.

METHODOLOGY

Questionnaire was used to conduct the survey. The survey was done to collect information regarding preferences of obese adolescent girls . The data collected was tabulated and analyzed. The simple random method of sampling was used to gather information for the study as careful selection of sample would give good results. About 25 obese adolescent girls were selected for the study. The various body measurement taken were bust , waist, back width, shoulder to bust point , distance between bust point , blouse length, sleeve length, sleeve circumference , armscye depth. These measurements were standardized. The designs were developed for sari and blouse through manual sketching according to the preference of obese adolescent girls. Then the designs were ranked according to preference of the subjects by the displaying the manual sketched design of sari and blouse to the obese adolescent girls (subject). From their preference top 7 designs were selected and constructed. The subject were requested to wear the sari for evaluation and visual evaluation also was done for them.

Findings of the study

The findings of the study are given under.

- The obese adolescent girls preferred the designer wear sari
- The maximum awareness about designer wear sari was created through the direct conversation through friends and relatives.
- The maximum respondents expressed that they had discomfort in wearing sari
- The maximum respondents expressed that the length and width of the sari was not adequate for them.
- Wearing of stiff cotton materials also was uncomfortable for obese adolescent girls
- Most of the respondents did not mind wearing sari for longer hours.
- The maximum respondents preferred heavy fancy material and dark color for this sari and preferred Zardoshi work for surface enrichment.
- They also preferred to drape sari with pleats.

- The liked “U” neck design for the blouse and also preferred to have embroidered design in their blouses.
- The liked to put on blouse with short sleeve length.
- The cross cut for the blouse seemed to be comfortable for them.
- The constructed sari and blouse worn by the subjects also seemed to be comfortable for them to wear. They were satisfied with the length ,width and colour

Conclusion:

Thus there are certain problems faced by obese adolescent girls in draping sari and these could be solved by careful selection of colour, designs and decorations .

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APPENDIX I

ELICIT INFORMATION ABOUT THE PREFERENCE FOR DESIGNER SARI AND BLOUSE OF OBESE ADOLESCENT GIRLS

Name:

Sex:

Age:

Educational Qualification:

Professional Status:

Marital Status :

Height : cm

Weight : kg

1. Are you aware of designer wear sari?

- Yes

- No

If yes, through what means?

- Advertisements

- Television

- Net

- Direct conversation

- Any other

2. Do you find any discomfort in wearing sari?

-yes

-No

If yes, give the common discomforts you undergo while wearing sari?

- Consuming time to drape
- Not comfortable to wear
- Body exposure

3. Is the length and width of the available sari adequate for you to drape ?

- Yes

- No

If No how do you manage it?

4. Is there is any specific material in which you feel discomfort?

- Yes

- No

If yes, mention the discomforts and the material in which you feel the discomfort?

5. How long would you prefer to wear sari?

-2 hours

-3 hours

-4 hours

- 5 hours

- more than 5 hours

6. What type of material would you prefer for designer wear sari?

- Silk
- Synthetic
- Crape
- Cotton
- Silk Cotton
- Netted
- Any others

7. What colour sari would you prefer for designer wear sari? Mention the colour

Light Colour- _____

Darker colour - _____

8. Mention the surface embellishment you expect on a designer wear sari?

- Embroidery
- Applique
- Patch
- Zardoshi
- Bead and Stone work

9. What style of drape would you prefer?

- Pleated

4 Pleats

5 Pleats

More than 5 pleats

- Floating

10. What type of neck design would you prefer?

- U shape neck

- V neck

- Squared neck

- Scalloped neck

- others

11. What type of decoration would you prefer in Blouse?

- Border

- Piping

- Embroidery

- Card

- Prints

- Any other

12. What is the length of the sleeve would you prefer for your blouse?

- Half

- $\frac{3}{4}$ th
- Sleeveless
- Full Sleeves
- Short Sleeve
- Anyother

13. Is there any specific blouse pattern which you prefer

- Straight
- Cross
- Cattori
- Choli

Body measurement in cms

- Bust circumference
- Waist circumference
- Shoulder width
- Shoulder to bust point
- Blouse length
- Neck depth-front
- Neck depth-back
- Upper arm circumference
- Lower arm circumference
- Armeye depth
- Sleeve length

APPENDIX II

VARIOUS BODY (BLOUSE) MEASUREMENTS OF BLOUSE FOR OBESE ADOLESCENT GIRLS

S.No	Sample of Measurement	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1.	Bust circumference	103	102	101	111	107	106	114	103	101	111	100	108	103	101	100	103	98.5	107	114	114	111	103	102	100	103
2.	Waist circumference	93	100	95	101	98	101	111	98	90	105	92.5	103	93	90	94	93.5	88	98	111	111	98	94	100	92	99
3.	Shoulder width	42	44	38	42	40.5	40	40	39	43	39	38.5	39	38	43	39	38	43	41	41	41	41	39	44	39	39
4.	Shoulder to bust point	26	30	26	31	27	29	27	24	26	24	29	24	23	27	23	24	29	27	27	27	27	29	30	24	29
5.	Blouse length	37	34	33	36	36	38	29	37	33	39	37	36	37	33	37	37	31	36	31	31	37	37	34	37	37
6.	Neck depth-front	19	23	26	24	26	25	23	19	23	20	26	22	19	20	19	21	25	26	23	23	24	26	23	19	26
7.	Neck depth-back	23	26	30	27	27	26	28	24	28	24	31	24	23	22	24	26	28	27	28	28	27	31	26	24	31
8.	Upper arm circumference	37	37	36	42	36	42	36	36.5	36.5	34	33	39	37	32	33	37	35	36	36	36	37	33	37	33	33
9.	Lower arm circumference	32	32	33	37	31	36	35	34	32	31	31	24	32	30	28	32	30	31	35	35	32	31	32	28	31
10.	Armeye depth	41	43	44	53	42	50	43	40	41	40	42	42	42	41	40	33	40	40	42	43	40	40	43	37	42
11.	Sleeve length	14	16	15	19	14	20	19	19	15	14	9	21	10	12	11	15.5	12	14	19	19	12	20	16	11	9

APPENDIX-III

CALCULATION OF STANDARD MEASUREMENT

A Sample calculation of standard measurements for the bust is given below

CLASS INTERVAL	F
98 - 100	4
100 - 102	5
102 - 103	6
104 - 106	1
106 - 108	3
108 - 110	-
110 - 112	3
112 - 114	3

Model value is calculated by using the formula

$$\begin{aligned} Mo &= L + \left[\frac{\Delta_1}{\Delta_1 + \Delta_2} \right] \times C \\ &= 104 + \left[\frac{1-6}{(1-6) + (1-3)} \right] \times 2 \\ &= 104 + \left[\frac{-5}{(-5) + (-2)} \right] \times 2 \\ &= 104 + (0.7) \times 2 \\ &= 104 + 1.42 \\ &= 105.42 \end{aligned}$$

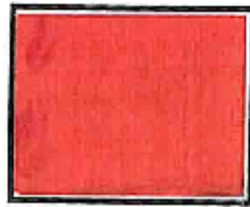
Hence the standardized measurement of bust is 105.42 cm

APPENDIX IV

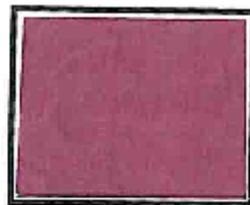
Fabric Swatches



MS1

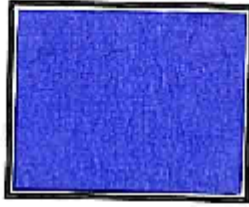


MS7



MS9

Fabric Swatches



MS13



MS16

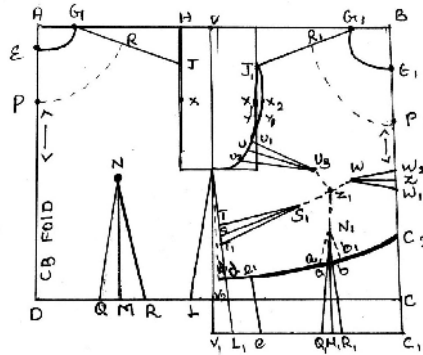


MS19



MS24

APPENDIX – V
DRAFTING DETAILS OF SARI BLOUSE



Draw rectangle ABCD with $AB = \frac{1}{2} \text{ bust} + 1\frac{1}{4}''$ and $BC = \text{back waist length} + \frac{1}{2}''$ (leave an extension of 2'' beyond Cd on paper). Mark $BV = \frac{1}{2} Ab$ in case the bust size is small, $\frac{1}{2} AB + \frac{1}{4}''$ for medium bust size and $\frac{1}{2} AB + \frac{1}{2}''$ for large bust size. Extend BC to Vv , parallel to and equal to BC_1 . Mark V_2 where this w line intersects DC. Label AD as centre back line and BC_1 as centre front line. Now the back pattern will be drafted within rectangle AVV_2D and the front pattern within rectangle VBC_1V_1 .

Back: Mark $AE = a''$, $AG = \frac{1}{12} \text{ bust}$, $AH = \frac{1}{2} \text{ back width}$ and VK (armscye depth) = $\frac{1}{4} \text{ bust}$ minus $\frac{1}{2}''$ to $1\frac{1}{2}''$ depending on the bust size (see the Table above for armscye and $\frac{1}{12} \text{ bust}$ values). Draw HOK as show on. Mark $HJ = 1''$ and $JX = \frac{1}{3} JO$. Connect all lines as shown.

Front: Mark $BG_1 = \frac{1}{2} \text{ front neck width}$ $\frac{1}{12} \text{ bust} - \frac{1}{4}''$. (The neck width at the front Y is taken salightly smaller of the front neckline). Take $BE_1 = \frac{1}{12} \text{ bust} + \frac{1}{4}''$ and $BH_1 = \frac{1}{2}$

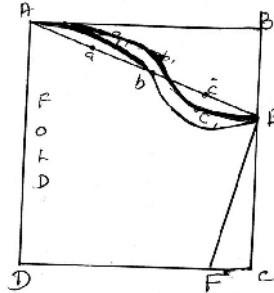
back width $-\frac{1}{4}$ ". Draw H_1O_1K as shown. Mark $H_1J_1 - 1$ " Divide $J_1 O_1$ into 3 equal parts by points X_1 and Y . Mark $X_1X_2 = \frac{1}{2}$ "and $Y_1Y_2 = \frac{1}{4}$ " Connect all lines as shown.

Back side seam and dart: For average and plump figures calculate front waist as $\frac{1}{2}$ waist + $\frac{1}{2}$ " and back waist as $\frac{1}{2}$ waist - $\frac{1}{2}$ ", (For thin figures take front waist = back waist = $\frac{1}{2}$ waist)

On the back pattern, mark $DL = \frac{1}{2}$ back waist + 1" and $DM = \frac{1}{2} DL$. Draw $MN = V_2K$ minus 1" to $1\frac{1}{2}$ ". Mark $MQ = MR = \frac{1}{2}$ ". Connect QN and RN to complete the back dart. Also connect KL the back side seam line.

Front side seam and dart: on the front patterns, mark $C_1L_1 = \frac{1}{2}$ front waist + $1\frac{1}{2}$ " (for dart) + $\frac{1}{8}$ " for ease (Optional). Connect KL_1 for front side seam. Locate bust point z_1 as follows: $BZ =$ shoulder to bust + $\frac{1}{4}$ " ease. $ZZ_1 = \frac{1}{2}$ distance between bust points or $\frac{1}{12}$ bust + $\frac{1}{2}$ ". Draw the dot as explain belows. (1) Front waist line dart: Mark $Z_1N_1 = \frac{1}{2}$ " and drawn N_1M_1 as shown. Mark $M_1Q_1 = M_1 R_1 = \frac{3}{4}$ ". Complete the dart. (2). Side seam dart: On KL_1 mark S 1" to $1\frac{1}{2}$ " below the level of bust point Z_1 . Connect SZ_1 . Mark $Z_1S_1 = 1\frac{1}{2}$ ". Mark $ST = ST_1 = \frac{1}{2}$ " x $(KL_1 - KL)$. Connect TS_1 and $T_1 S_1$ to complete dart. (3) Centre Front dart: (optional) Mark $Z_1W = 1$ " along Z_1Z . Mark $ZW_1 = ZW_2 = 3,8$. Connect WW_1 and WW_2 to complete the dart. (4) Armhole dart: This dart is usually pinned at the time of fitting. On armhole curve, J_1K , mark $U \frac{3}{4}$ "away from Y in the direction shown. Connect UZ_1 and mark $Z_1U_3 = 2$ ". Mark $UU_1 = UU_2 = \frac{1}{4}$ " Complete the dart as shown.

APPENDIX -VI
DRAFTING DETAILS OF SLEEVE



Draw rectangle ABCD with the following dimensions keeping AD on Fold.
 AB – Armscye depth minus $\frac{3}{4}$ " (Take armscye depth corresponding to your bust measurement from the Table. AD = Sleeve length. Mark BE = $\frac{1}{2}$ AB and DF = $\frac{1}{2}$ lower arm + $\frac{1}{8}$ ". Connect AE and EF, Divide AE into 4 equal parts and mark a,b,c as shown. Mark $aa_1 = \frac{1}{2}$ ", $bb_1 = \frac{1}{4}$ ", $cc_1 = \frac{1}{4}$ " and $cc_2 = \frac{1}{2}$ " in the directions shown. Connect $a_1 b_1 c_1 E$ for back and $A a_1 bc_2 E$ for front sleeve cap seam lines. Cut out the sleeve pattern and label it.

Seam Allowances: These are not included in the pattern. Recommended seam allowances for a with waist yoke are as follows : side seam of sleeve, bodice and yoke $\frac{3}{4}$ " to 1" : armhole, sleeve cap, shoulder seam and lower edge of front $\frac{1}{2}$ " , neckline, centre front edges of front and the upper, lower and centre front edges of yoke $\frac{1}{4}$ " , sleeve hem 1", back hem $1\frac{1}{4}$ " – $1\frac{1}{2}$ ".

