



Fashion clothing inspired from historical and traditional costumes via antibacterial treatment

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ABSTRACT

Designs ideas can be obtained from many sources of inspiration. Designers are often influenced by anything visual from nature to a fruit plate. Apparel designers are inspired by necessity the need to create fashion which called Form Follows Function. From this point of view antibacterial treatment now is not a luxury anymore it became a necessity not only in the medical field but in all life parts. So in this study Antibacterial treatment has been done to cotton and viscose fabrics using Polyethylene Glycol (PEG) which gives good antibacterial activity, followed by dyeing and /or printing. 5 designs from historical and folk inspiration using the (PEG) treated fabrics were adapted to make fashionable women dresses. The designs were analyzed from the aesthetic point of view.

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1.Introduction

Anything visual can be a source of inspiration for a design, from a John Galliano garment to a plate of baked beans. Designers are mainly interested in the visual appearance and connotations of the objects, and seldom in the conceptual integrity of the design. Different sources of inspiration can be combined in one garment: a designer garment, a Roman ornament, a piece of tree bark. Even though the use of sources of inspiration is entirely pragmatic, it is possible to identify different types of sources of inspiration performing different roles. Designers find the same inspirational blend of colors, motifs shapes, and spaces in folk costume. Folk dress signifies a special day, such as Sunday, holiday, or ceremonial day. Clothing for brides and grooms are among the most elaborate. Folk dress indicates the occupation of the wearer (for example, shepherd). Folk dress distinguishes wealth and social status, typically through the number and quality of clothing items. Components of folk dress have a “magical” function. For example, the ritual marriage cap placed on a new bride brought fertility and good fortune. Folk dress signifies regional and national affiliation^(1,2)

Historic and folk Costumes

Costume falls into two category historic costume, the fashion of certain historical period, and or folk (ethnic) costume, traditional national or regional dress. Both inspirational sources of design.^(1,2) the following are some of the historic and folk styles:-

Historical study

1- Historic influence

Designers usually are sensitive to the combinations of color motifs, lines, shapes, and spaces in rich historical period costume^(1,2)

A-Egyptian Style

Draped or wrapped clothing predominated in Egyptian dress. Lower status men wore the simplest of garments: a loincloth of linen or leather, or a leather network covering a loincloth. Men of all classes wore wrapped skirts, sometimes called schenti, shent, skent, or schent by costume historians..

Tunics appear in Egyptian dress during the New Kingdom, possibly as a result of cross-cultural contact with other parts of the region or the conquest and political dominance of Egypt for a time by foreigners called the Hyksos. Long wrapped garments appear to have been worn by both men and women until the Middle Kingdom, after which they appear only on women, gods, and kings. Instead during the New Kingdom men were shown wearing long, loose, flowing pleated garments, the construction of which is not entirely clear. Shawls were worn as an outermost covering and were either wrapped or tied. Slaves and dancing girls were sometimes shown as being naked or wearing only a pubic band. Laboring women wore skirts when at work. Women, especially those of lower socioeconomic status, wore long, loose tunics, similar to those worn by men. From the writings of Herodotus, it appears this garment was called a kalasiris. Sheath like garments are often shown with elaborate patterns. Suggestions for how the patterns were made have included weaving, painting, appliqué, leatherwork, and feathers. The more likely answer is that beaded net dresses, found in a number of tombs, were placed over a wrapped dress. Garments from tombs from the Old Kingdom and after also include simple V-necked linen dresses made without sleeves. A later, sleeved version has a more complex construction that required sewing a tubular skirt to a yoke^(3, 4,5). Fig. (1) shows ancient Egyptian women.



Fig (1). Ancient Egyptian women.

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B-Roman style.

Women's dress in Rome differed only a little from that of Greek women of the Hellenic period. They wore an under tunic, not seen in public, and an over tunic very much like a Greek chiton. A palla, rather similar to a Greek himation, was draped over this. The colors of these layers varied. Opinions differ as to just what the stola with the instita was. Many costume histories use the word stola interchangeably with outer tunic. However, literary works clearly indicate that the garment was associated only with free, married women. Some sources describe the instita as a ruffle at the bottom of the stola or outer tunic. It is a special type of outer tunic suspended from sewed-on straps.^(6,7,8,9,10) Fig. (2) shows ancient roman costumes.



Fig (2). Ancient roman –costumes

C-Empire style

Empire silhouette, Empire line, Empire waist or just Empire is a style in women's clothing in which the dress has a fitted bodice ending just below the bust, giving a high-waisted appearance, and a gathered skirt which is long and loosely fitting but skims the body rather than being supported by voluminous petticoats. The outline is especially flattering to pear shapes wishing to disguise the stomach area or emphasize the bust. The shape of the dress also helps to lengthen the body's appearance. While the style goes back to the late eighteenth century, the term "Empire silhouette" arose over a century later in early twentieth-century Britain; here the word empire refers to the period of the First French Empire; Napoleon's first Empress Joséphine de Beauharnais was influential in popularizing the style around Europe. It was a very light and loose /dresses usually white and often with shockingly bare arms, rose sheer from the ankle to just below the bodice, where there was a strongly emphasized thin hem or tie round the body, often in a different color^(12,11) Fig (3) shows some empire styles



Fig (3). Empire style.

2-Folk(ethnic) influence

Folk dress may indicate religious affiliation. Age and marital status is communicated by folk dress. Contradictory situations in peasant society, such as single motherhood, are visible in a woman's appearance. Folk dress has approved

aesthetic qualities that attract available members of the opposite sex.^(13, 14)

a-Egyptian style

1 -Falahy rural Galabya (Qalupeya, Behaira, sharquia)

Long dress reached the feet ends with valunes (qurnaish) Sleeves are long and wide terns narrow in the ends. Neck opening may be square or, rounds or oval with yoke (sofra) embodied with ribbons, zigzag most the decoration of the falahy dress concentrate or emphasis in the sofras decoration. The dress may differ in small details between governorates like plants the center front line sleeve plates or gathers or decoration style.⁽¹⁵⁾

2-Siwa

The dress or shirt in Siwa looks different in construction of the other Egyptian folk costumed. Looks like the ancient Egyptian tonic and old Coptic shirt. The embroidery focused mainly in the front it looks like rays and the embroidery geometrical and naturalistic The Siwan slacks (serwal) look wide at the upper turning wider in the bottom. The decoration focused in the focused in the bottom of legs⁽¹⁵⁾



Fig (4). Sample of Siwa cloth

3-Sini

North Sini The dress falls to the feet with wide cut The sleeves long and wide may reach the floor (Ardan) .The decorative embroideries are geometrical and naturalistic in the front and sides of the dress⁽¹⁵⁾



Fig (5). Styles of sini clothes

B-African style.

African clothing is known for its colorful fabrics and distinctive designs. But few people take the time to examine the cultural significance of African fashion .The colorful clothes of Africa first became a sign of wealth around 1000 BC during the period of the trans- Saharan trade when traders used strip cloth as a form of currency. In order of tradition and value, 1) weaves, 2) tie dyes, 3) batiks, and 4) industrial prints represent the four types of cloth Africans use to create clothing. Woven cloth, the oldest and most valuable type of fabric, is the most time consuming to make. Weaving represents a tradition that passes down from father to son and from uncle to nephew and from mother to daughter and aunt to niece. The complexity of the weave, the color, and the type of thread used, determines the value of the fabric. The use of locally spun threads enhances the value of the cloth, as Africans believe that imported textiles have no ancestral link and therefore less value. Yellow represents fertility (like the

ripeness of an egg yoke or a fruit) and vitality. Green signifies there newal and growth seen in plants and represents the cycle of birth and decay. Blue represents the presence of God and the omnipotence of the blue sky. Blue also refers to a pure spirit, one which rests in harmony. Red connotes passion, the passion of political determination, struggle, and defense. Clothing traditions vary with each ethnic group. Each society has its own name for different types of clothing made out of traditional cloth particular to that people. Styles of clothing vary from the simple, plain shirt, and wrap; to the intermediate in which there is the beginning of design and slight detail; to complex, more detailed formal cloths. Clothes include tops, bottoms (trousers, $\frac{3}{4}$ length pants, and shorts), and gowns (ankle, calve, and knee-length^(16,17, 18, 19))

Fig(6). Shows African dresses.



Fig (6). Styles of African clothes.

2-Experimental work

1- Treatment of viscose, and cotton fabrics with Polyethylene glycol (PEG) .

The fabric were weighed and padded through two dips and two nips in the solution containing Polyethylene glycol (PEG) with different molecular weights (400-600-1000-2000) Polyethylene glycol (PEG) concentrations (20-60%),citric \acid concentration (2-30%)to approximately 100% wet pick up on laboratory padder. The fabrics were (dry-cure) one step at temperature range (100-140 °C) for time intervals (1-3 minute). The fabrics were washed with 2 g/l non ionic detergent ,after that fabrics rinsed with hot then with tape water, and air dry.

2-Dyeing of viscose, and cotton fabrics with reactive and direct dyes.

Both untreated and treated viscose, cotton and polyester fabrics were dyed with reactive and direct dyes by exhaustion method. The dyeing process was carried out according to the dyeing profiles (conventional dyeing method)

3-. Testing and analysis

3.1. Antibacterial properties

Antibacterial properties were quantitatively evaluated according to AATCC 100 test method. ⁽¹⁾

4-Designs, Pattern and layout:



Design (1).

Functional aspect

This design is a bath gown (bath wrap) inspired from the roman style. The treatment of such item used regularly in the bath (which all the bacteria condition of life is available) provides a good antibacterial protection to the wearer.

• Structural aspects

Lines in this design are simple; the curved line in the one shoulder cut conveys action and excitement and also adds the feeling of dynamic and activity. The side opening of the gown provides easy and quick open and close. The vertical lines created by the side opening suggest movement; the one shoulder cut asymmetrical balance which give attracting lock



Design (2)

Functional aspects

This design is a dress inspired from the African style; this design consists of dress and leather band, it's long which cover a big part of the body that can give good antibacterial properties.

Structural aspects

The tubular shape or silhouette is the first impression for this design which gives the comfort and looseness effect, the empire line achieved by using the leather band with asymmetrical balance which gives interest and attracts the eyes of whole design. (The sunportal) style gives the wearer the opportunity to take of easily, the crochet band on the top allow the wearer to tight or loose it as preferred.



Design (3)

Functional aspects

This design is a dress inspired by Sini style, this dress provide a good cover and protection through covering about of the body.

Structural aspects

The structural elements are shown in this design appearance via V-neck line which allow ease of wearing, the loosely shape of the design provide ease of movement and comfort, the smooth flowing diagonal lines in V- neck and hem line produce repetition and good transition and proportion in the design, the smooth texture of dress in addition to the diagonal lines increase the sense of femininity and attraction.



Design (4)

Functional aspects

This design is a fashionable dress inspired from the Egyptian folk costume (Falahy galabiya)

Structural aspects

The lines in this design are very simple, the horizontal lines in the empire cut and the hem band give the feel of steady and confidence which make the eye in repetition and continuous movement creating rhythm. The rectangular neck line gives the wearer the freedom of putting on and taking off. Mixing the fabrics in this design grey cotton mish and printed cotton gives the design more value and enriches the design feature.



Design (5).

Functional aspects:

This is a fashionable surgical gown, it's a representative of the medical sector, it has long sleeves and covering the most three important contaminated areas

- For arms
- Chest
- abdomen

It has dual antibacterial with anti repellent effect for insuring the highest protection for the wearer.

Structural aspects

The lines in this design differ between horizontal lines in the Empire cut and curved line in the raglan sleeves cut. The vertical line gives the sense of the settled down when curved line give smooth and pleasant look, the neck line are semi-tied for protection need and the opening lay in the side of the sleeves and yoke which allow the wearer to take off and put on easily.



Design (6).

Functional aspects

This design is a fashionable summer dress inspired from the ancient Egyptian style.

Structural aspects:

The structural elements in this design are manipulated via semicircular neck opening allowing easy putting in and taking off easily. The vertical lines showed in the pleats on both sides of the dress make desirable balance with giving the eye the way to move up and down which give the wearer slimmer look.

The pleats loose under bust line to the hem line which give more comfort and easy to move .the back of the design looks different to the front it consists of gathering all the back loosely in a simple elegant tie which also support the comfort concept.

3-Result and discussion

The 6 designs were manipulated using the treated cotton & viscose fabrics ,then were analyzed through aesthetic point of view.



Design (1)

• Aesthetic analysis

The feminine appearance and smooth look are indicated in this design. The use of purple mixed with turquoise and pink colors in the gown give the feel of calm, cool and youth look. The embroidery with orange, yellow, turquoise and pink color provide a contrast and interesting look in addition to catch the eye gives supporting the decorative look

Design (1) application

Fabric: 100% cotton (pile construction)

Techniques:

- Tie and dye
- Embroidery stitches

Dyes:

- Cibacron® Terquoise Blue GF
- Cibacron® Red Ls-B
- Cibacron® Navy Ls-G

Bacterial Reduction rate % 85%



Design (2)

Aesthetic analysis

The aesthetic elements in this design achieved by the (energy yellow) color mixed by the tie dye green circles which give joyful and freshness look .The mixed colors in the crochet band which mixed in consequence way and repeated in the hem line creates smooth transition passage and harmony. The decorative hand stitches in purple, turquoise and raspberry pink give a cheerful look. The green leather band with different hand stitch and the green circles in the dress give formal and cheerful feeling in addition to mode of attraction.

Design (2) application

Fabric: - 100% cotton for the dress leather for the band

Techniques:

- Tie and dye
- Embroidery stitches
- Crochet

Dyes:

- Cibacron® Yellow Ls-K
- Cibacron® Navy Ls-G

Bacterial Reduction rate % : 85%



Design (3)

• Aesthetic analysis

The feminine appearance and smooth look are represented in this design, the smooth hand of viscose texture give the feel of flowing and draping which increase the feminine look. This design has diversity of decorative elements creating activity and creativity the harmony and proportion between different colors which give a point of interest. The shiny colors in the trimming band indicated the design colors without interruption. Batik impart an active and interesting effect on the design

Colors play an important role in this design mixing colors without miss give the design a unique look. Blue with its coolness , hunter green with its refreshness, claret pink with its elegance ,energy yellow and orange are giving the spirit of hope mixed colors which create emphasis rhythm proportion to the entire design .The diversity of colors generate a different moods to the wearer. The hand stitching on the curves in design creates symmetrical balance and feeling of interest.

Design (3) application

Fabric: 100% Viscose Rayon

Techniques:

- Batik
- Embroidery stitches
- Embroidery finishing band

Dyes:

- Cibacron® Yellow Ls-K
- Cibacron® Red Ls- B
- Cibacron® Terquoise Blue GF

Bacterial Reduction rate %: 82%



Design (4)

• Aesthetic aspects

The glamour pink and ivory colors in dress create cheerful happiness feeling in addition to mood of attraction. The stencil printing in the dress with the degradation of cotton candy pink, purple and pink sorbet color mixed in a consequence way without interruption, creating transition and gradation between them. The smooth transition between colors in yoke and dress make a good rhythm and balance. The hand stitching on the loose flower with yellow stitch gives a radial point of attraction that catches the eye. The design have a youth look and feminine too.

Design (4) application

- Fabric:** 100% Cotton (Plain and mesh construction)
- Techniques:**
- Tie and dye
 - Stencil
 - Embroidery stitches
- Dyes:**
- Cibacron® Yellow Ls-K
 - Cibacron® Red Ls- B
 - Cibacron® Terquoise Blue GF
 - Pigments
- Bacterial Reduction in rate %:** 85



Design (5)

Aesthetic aspects

The aesthetic elements in this design achieved by the color and decoration, the choice of orchid violet color in the gown fabric gives the effect of calmness and restful look to the surgeon. The decoration of the hand drawing in the chest and sleeves with different colors orange, blue, silver and yellow gives a joyful look. Joining these two elements give the final look formality with cheerful.

Design (5) application

- Fabric:** - 100% Cotton
- Techniques:**
- Dyeing
 - Free hand drawing
- Dyes:**
- Cibacron® Red Ls- B
 - Cibacron® Navy Ls- G
- Bacterial Reduction rate :** 85%



Design (6)

• Aesthetic aspects

The decorative elements achieved in the design through the smooth and feminine between the line and color. Using the vertical lines in pleats and princess line give the design a feminine look with motional and active spirit strong orange color mixed with turquoise in the middle produce smooth transition passage and harmony to each other. Where the orange the color of hope and energy the turquoise is the marine and active color of pharos. The shiny colors of turquoise beads on the orange base in the chest and necklace give nice attracting contrast and with clear color quality attracts attention and gives the design the impression of royalty. Using the band supporting the concept of having different looks for the same item.

Design (6) application

- Fabric:** -100% Cotton (mesh construction)
- Techniques:**
- Tie and dye
 - Bead work
- Dyes:**
- Cibacron® Yellow Ls-K
 - Cibacron® Red Ls- B
 - Cibacron® Terquoise Blue GF
- Bacterial Reduction rate :** 84%

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