

Preferred sleepwear designs for post-mastectomy women to improve their self confidence on own body image

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Abstract: The purpose of the study was (a) to identify the importance of sleepwear for post-mastectomy women and (b) to develop sleepwear design features to ascertain which features are preferred by them. The sample consisted of 75 voluntary post-mastectomy women who were members of the Reach to Recovery of the American Cancer Society in Texas, USA.

The data were obtained through the use of a self-administered questionnaire which elicited information related to the importance of sleepwear, design preferences for sleepwear, and demographics. To test the hypotheses of the study, the Kruskal-Wallis one-way ANOVA, the Wilcoxon matched-pairs signed-ranks test, the Friedman two-way ANOVA, and the chi-square analysis were computed with the use of the Statistical Package for Social Sciences (SPSS) Data Analysis program.

Sleepwear could improve post-mastectomy women's perception of their body. The clothed (worn sleepwear) body cathexis scores (levels of a feeling toward body satisfaction) were higher than the unclothed body cathexis scores, especially considering the improvement of the breast satisfaction. The results suggest that the subjects were more satisfied with their clothed bodies than with their unclothed bodies. Participants' age, marital status, and type of surgery revealed differences in preferred styles, weave, and fiber content.

Key words: *Sleepwear Design, Body Image, Special Clothing*

1. Introduction

Breast cancer is the most common fatal cancer among women. This disease and related treatments have serious psychological as well as physical consequences. As with any body part amputation, the loss of a breast through surgery, called mastectomy, can have devastating effects on a woman. The more she values her breasts the greater is the effect on her self-image[1].

Attractive and appropriate clothing helps patients with a distorted body regain their self-esteem. According to Schielder[2], clothing, when worn, actually becomes part of the body image. Bodily appearances can be transfigured with the use of clothing, and a change in dress can result in a change in attitude toward the body and the self.

Many researchers have studied special clothing needs of individuals with disabilities. However, no research studies were found that investigated intimate apparel, especially sleepwear, needs of postmastectomy women. This study investigated the importance and the preferences of sleepwear for postmastectomy patients. The primary purpose of this study was to identify female breast cancer patients' feelings about their bodies and the importance

of sleepwear in improving their perception of body image. An additional purpose was to determine sleepwear design features preferred by breast cancer patients.

2. Theoretical Framework

2.1. Body Image

Body image as a psychiatric concept was originally defined by Schielder[2] as the image of the body which is formed in the mind--the way in which one's body appears to oneself. According to Schielder, the image of the human body means the picture of the body that the individual forms in the mind or the way the body appears to the individual. Body image is an active and dynamic part of the world, constantly changing according to life circumstances.

According to Anthony[3], body image is not merely an awareness of the physical body; it is not based on perceptions alone, nor is it necessarily an accurate mental representation of the individual's actual body structure. Body image involves knowledge and awareness of the inside as well as the outside of the body. The picture created by the individual is flexible and dynamic. Body image is gradually organized by means of all the influences affecting an individual which include constitutional factors, inner psychic experiences, sensory impressions, and environmental attitudes, together with the individual's interpretation of these influences and their integration into the total personality. The presence of disease or deformity in some part of the body can alter this body image or influence its subsequent organization, as can excessive attention by persons in the individual's environment to the body or some specific part of it. Body image is an orderly, maturational process and is constantly changing, undergoing reorganization and elaboration depending on the individual's present total life experience.

Jourard and Secord[4] believed that body image is perceived by the individual as a tool for impressing others. An alteration in this tool, such as a mastectomy, will require a need for change. According to Schielder[2], body image can be considered as a construction that is built up, dissolved, and built up again. A mastectomy changes the body image that has built up and causes it to dissolve, but a breast reconstruction surgery can reshape and build up the body image again.

2.2. Body Cathexis

Secord and Jourard[5] defined body cathexis as the degree of feelings of satisfaction or dissatisfaction that an individual has for the various parts or processes of the body. Body cathexis may be considered as an integral part of body image. It is the evaluative dimension of body image and is defined as positive and negative feelings toward one's body[6]. Also, the concept of the beauty or ugliness of one part of the body may alter the entire image positively or negatively as indicated by body cathexis[5].

The relationships between body cathexis and body image and clothing have been examined. In a study by Markee, Carey, and Pedersen[7], the body cathexis scale and a clothed body cathexis scale were administered to investigate the importance and satisfaction of clothing. Results indicated that individuals may use clothing as a way to camouflage perceived figure faults and bring their bodies closer to their perceptions of the norm, temporarily improving body cathexis. In a study by Feather, Ford, and Herr[8], the body cathexis scale was used for basketball players to rate their satisfaction with their bodies unclothed and in uniform. Of the three areas of the body (upper, lower, and total), players indicated they were most dissatisfied with parts of the lower body. Being in

uniform did improve their perceptions of their bodies.

2.3. Significance of Breast Cancer

The breast plays a major part in every woman's body image or idea of what she looks like[9]. The body image may not be an objectively accurate picture, but is an integral part of the individual's thinking about herself. Loss of a major body part or limb destroys the body image and, with it, the sense of the body's naturalness and wholeness, even beauty. The individual feels a sense of bereavement, similar to the feelings at the loss of a close and dearly loved friend or relative. For a woman, whose breasts have been important in her life and represent a precious part of a valued relationship, the loss will be more deeply felt than the loss of any limb[9].

The patient's first concern after a mastectomy is her image to the world and how she thinks others perceive her[10]. The change in a woman's body image may bring with it a loss of the sense of sexual identity, with a subsequent lowered self-esteem[11]. This is often accompanied by an alteration in usual sexual relationships, specifically a decrease in sexual activity.

The patient's response to loss of body part varies with the specific significance of that part to the individual[12]. The emotional impact of a mastectomy has a significance to a woman that transcends cosmetic or functional factors, since a breast, like the uterus, is far more likely to symbolize a woman's femininity. The patient's reaction to losing a breast will, therefore, depend to a great extent on her feminine identity. This in turn, is determined by her previous relationships with parents, other family members, and more currently, the relationship with her husband.

2.4. Special Clothing for Postmastectomy Women

Many patients discover that they cannot wear low-cut or sleeveless dresses. These problems have led to frequent reports of feeling socially isolated, awkward, and insecure by mastectomy patients who otherwise appeared well rehabilitated. Feather and Lanigan[13] recognized that women did not wear garments with tight sleeves and armholes because their arms might swell. A fuller sleeve such as a dolman, kimono, or a set-in sleeve gathered across the sleeve cap is considered more suitable for her[13]. Tight bracelets and watchbands on the operative arm should also be avoided[14].

In order to look feminine without emphasizing the bust line, Feather and Lanigan[13] recommended choosing fabrics that do not cling or reveal the body form. Soft, medium-weight fabrics are described as most becoming to any irregular figure, and randomly patterned or textured fabrics are recommended as less revealing than plain fabrics.

According to Feather and Lanigan[13], traditional bust darts generated from the bodice side and waistline emphasize the nonsymmetrical bust line. To make it difficult to compare one side with the other, vertical lines and asymmetry should be used. Vertical lines or even diagonal lines carry the eye up and down. Buttons down the center of a garment's front divide the body too obviously into two equal portions; an unequal division is more flattering to the slightly irregular figure. Curved lines in the structure or overall silhouette create a feminine look.

Women who have undergone mastectomies usually wish to resume the activities that they previous enjoyed, including swimming. Because the surgery may involve tissue adjacent to the breast, postmastectomy swimwear is designed to cover more of the upper chest and underarms than conventional suits.

Many underwear companies have introduced intimate apparel for cancer survivors[15]. Based on the needs of

cancer patients, they have created a variety of fashionable items, such as bras, camisoles, nightgowns, pajamas, and headwear[16]. Postmastectomy bras combine comfort and support with elegance and femininity. They offer a pocket on both sides to fit the breast form on either side. Cotton camisoles are designed to be worn immediately after surgery, and have no internal seams to irritate the surgical area. Headwear and hair pieces cover the entire head for those with hair loss due to radiation or chemotherapy[17].

3. Methodology

The population for this study consisted of lumpectomy or mastectomy patients in the U.S. The accessible population was those whose names are obtained through the Reach to Recovery programs in Texas from lists provided by the American Cancer Society at Dallas.

In order to obtain information regarding the subjects' clothing importance and body image, and design preferences for sleepwear, a three-part questionnaire was used. Part one of the questionnaire consisted of the design preferences for sleepwear. It was divided into two sections. The first section included six general questions about sleepwear preferences. The second section solicited responses to questions about preferences of specific sleepwear design features. Sleepwear designs were sketched using flat line drawings. Each piece of sleepwear was divided into six design features: style made of satin, style made of plain-woven, style made of tricot, necklines, sleeves, and chest designs. Part two of the questionnaire consisted of a scale used to measure how sleepwear can improve the subjects' perception of their body. From the body cathexis scale, 19 relevant items were selected. Each item was measured for both the unclothed body perception and the clothed (in sleepwear) body perception. A 5-point Likert-type scale evaluated each component from 1 indicating dissatisfaction to 5 indicating satisfaction. Questions in Part three requested demographic information about the subjects.

Questionnaires were mailed from the American Cancer Society at Dallas for privacy. Each participant received a cover letter, survey questionnaire, and self-addressed, stamped return envelope. The mailing had taken place in summer of 2000. The participants were to return the questionnaire within four weeks. From the American Cancer Society at Dallas, a sample of 200 was selected from a list of the Reach to Recovery Program in Texas and 75 usable questionnaires were returned.

Nonparametric statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) Data Analysis program at Texas Woman's University.

4. Results

4.1. Demographic Characteristics of Subjects

The categorized age of respondents was as follows: 23 (30.7%) in the under 50 age range; 19 (25.3%) in the 50-59 age range; 20 (26.7%) in the 60-69 age range; and 13 (17.3%) in the 70 and over age range. The largest number of the subjects, 50 (66.7%), were married. Other of respondents indicated that they were widowed (16.0%), separated/divorced (12.0%), and single (5.3%). The largest number of the subjects, 32 (42.7%) had a mastectomy 1-2 years ago. Nineteen (25.3%) of the subjects did so over five years ago, 12 (16.0%) did so 7-12 months ago, seven (9.3%) did so 3-5 years ago, and five (6.7%) did so 0-6 months ago. The largest number of subjects, 29 (38.7%), had a modified radical mastectomy. The next largest number of the subjects, 22 (29.3%), had a lumpectomy. Ten (13.3%) had a simple/total mastectomy, eight (10.7%) had a radical mastectomy, and six (8.0%) had a partial mastectomy. Fifty (66.7%) of the 75 subjects did not have a breast reconstruction surgery, and

25 (33.3%) had a breast reconstruction surgery.

4.2. Satisfaction of Body

The 19 body areas with their respective means and standard deviations for unclothed body cathexis and clothed (in sleepwear) body cathexis are found in Table 1. In the mean scores of unclothed body cathexis, height ranked the highest in satisfaction (M=4.28), and weight (M=2.78) the lowest. When rating the body in sleepwear, the mean scores of clothed body cathexis (M=3.747) were slightly higher than the mean scores of unclothed body cathexis (M=3.529). In particular, the mean score for bust was increased 1.11 (from 3.24 of unclothed to 4.35 of clothed). The relative position of most body areas was the same, except for bust. In 19 body areas, bust was in 15th position when unclothed and moved up to first position when clothed.

Table 1. Descriptive Statistics for Unclothed and Clothed Body Cathexis

Body Sites	Unclothed		Clothed	
	M	SE	M	SE
Upper				
Facial complexion	4.09	1.05	4.09	1.07
Neck	3.91	1.10	3.92	1.04
Width of shoulder	3.82	1.19	3.91	1.09
Arms	3.30	1.36	3.54	1.25
Bust	3.24	1.43	4.35	5.97
Back	3.64	1.23	3.81	1.11
Lower				
Hips	3.14	1.32	3.45	1.21
Legs	3.27	1.34	3.51	1.23
Total				
Torso	3.19	1.25	3.57	1.18
Height	4.28	.91	4.26	.95
Weight	2.78	1.38	3.09	1.40
Forehead	4.04	.99	4.00	1.03
Back view	3.41	1.23	3.63	1.17
Skin texture	3.79	1.24	3.89	1.16
Body profile	3.05	1.27	3.41	1.22
Posture	3.41	1.22	3.55	1.20
Body build	3.33	1.30	3.55	1.25
Appearance	3.57	1.21	3.85	1.13
Health	3.80	1.19	3.81	1.21

To measure the difference between unclothed body cathexis and clothed (worn sleepwear) body cathexis, the Wilcoxon matched-pairs signed-ranks test was used. The results showed that there were significant differences between unclothed body cathexis and clothed (worn sleepwear) body cathexis for upper body sites ($Z = -3.676$, $N = 71$, $p < .05$), for lower body sites ($Z = -3.527$, $N = 71$, $p < .05$), and for total body sites ($Z = -3.762$, $N = 71$, $p < .05$). They revealed that the subjects were more satisfied with their clothed (worn sleepwear) bodies than with their unclothed bodies.

4.3. Preferences of Sleepwear

4.3.1. General Sleepwear Preferences

For questions regarding general preferences about sleepwear, frequencies and percentages were computed. As shown in Table 2, the short gown (28.5%) ranked as the most preferred sleepwear style. The teddy (1.1%) ranked

Table 2. Descriptive Statistics for General Preferences of Sleepwear

Preference	n	%
Style		
Teddy	2	1.1
2-piece shorties set	28	15.6
Short gown	51	28.5
Long gown	35	19.6
Pajamas	27	15.1
T-shirt	28	15.6
Others	8	4.5
Number of Items		
Under 5	17	22.7
5 – 10	36	48.0
11 – 15	12	16.0
Over 15	10	13.0
Shopping Habit		
Intimate Apparel Specialty Store	20	11.5
Department Store	62	35.6
Apparel Specialty Store	16	9.2
Catalog	22	12.6
Discount Store	48	27.6
Others	6	3.5
Color		
Light Pink	40	18.8
Light Blue	47	22.1
Ivory	34	16.0
White	19	8.9
Red	15	7.0
Purple	14	6.6
Blue	17	8.0
Black	18	8.4
Gold	3	1.4
Animal Print	6	2.8
Fabric after the Surgery		
Silk Satin	24	12.1
Lace	9	4.5
Nylon Satin	27	13.6
Nylon Tricot	20	10.0
Cotton Flannel	26	13.1
Plain-woven Cotton	43	21.6
Cotton Knit	44	22.1
Others	6	3.0
Fabric before the Surgery		
Silk Satin	21	17.2
Lace	10	8.2
Nylon Satin	17	13.9
Nylon Tricot	12	9.8
Cotton Flannel	14	11.5
Plain-woven Cotton	20	16.4
Cotton Knit	25	20.5
Others	3	2.5

as the least preferred style. The majority of the respondents (48.0%) indicated they have 5 to 10 sleepwear items. The most favorite shopping location was department store (35.6%). The next favorite store was the discount store (27.6%). Other responses included catalog shopping (12.6%), intimate apparel specialty store (11.5%), and apparel specialty store (9.2%).

Light blue (22.1%), light pink (18.8%), and ivory (16.6%) ranked as the most preferred colors. The next preferred colors were white (8.9%), black (8.4%), blue (8.0%), red (7.0%), and purple (6.6%). Gold (1.4%) and

animal print (2.8%) ranked the least preferred colors. In fabric preference before the breast surgery, the most preferred fabric was cotton knit (20.5%). Silk satin (17.2%) and plain-woven cotton (16.4%) were the next preferred fabrics. After the breast surgery, cotton knit (22.1%) and plain-woven cotton were the most preferred fabrics in which to sleep. Nylon satin (13.6%), cotton flannel (13.1%), and silk satin (12.1%) were the next preferred fabrics.

4.3.2. Categorized Sleepwear Design Preferences

In order to test the differences in preferences of five satin sleepwear styles (teddy, camisole/Tap, chemise, nightgown, and pajama), the Friedman two-way ANOVA was used. As shown in Table 3, there were significant differences in five satin sleepwear style preference scores ($X^2(4, N=75) = 82.195, p < .05$). An analysis of post-hoc verified that the preference of teddy was lower than other styles and the preference of chemise was higher than camisole/Tap. In style preferences by age of the subjects, the differences of the preference scores of camisole/tap ($X^2(3, N=75) = 12.189, p < .05$) and chemise ($X^2(3, N=75) = 11.947, p < .05$) were significant. In both camisole/Tap and chemise, the preference scores of the respondents under 60 were higher than the respondents over 70 years old. By marital status, surgery type, and breast reconstruction, there were not significant differences in satin style preferences.

In the preferences of five plain-woven sleepwear styles (teddy, camisole/Tap, chemise, nightgown, and pajama), there were significant differences in five sleepwear style preference scores (As Shown in Table 3, $X^2(4, N=75) = 82.195, p < .05$). The preferences of chemise, nightgown, and pajama were higher than teddy and camisole/tap. In style preferences by age of the subjects, the differences of the preference score of chemise ($X^2(3, N=75) = 8.647, p < .05$) were significant. By marital status, surgery type, and breast reconstruction, there were not significant differences in plain-woven style preferences.

Table 3. Friedman Two-Way ANOVA of Sleepwear Design Preferences (N=75)

6 Sleepwear Design Categories	<i>df</i>	X^2	<i>P</i>
Satin Sleepwear Styles	4	82.195	.0000 *
Plain-Woven Sleepwear Styles	4	79.472	.0000 *
Tricot Sleepwear Styles	4	46.493	.0000 *
Neckline Designs	4	61.989	.0000 *
Sleeve Designs	4	50.285	.0000 *
Chest Designs	4	35.289	.0000 *

Note. * denotes preferences differ significantly at $p < .05$

In the preferences of five tricot sleepwear styles (teddy, camisole/Tap, chemise, nightgown, and pajama), there were significant differences in five sleepwear style preference scores ($X^2(4, N=75) = 46.493, p < .05$). The preference of teddy was lower than chemise, nightgown, and pajama. The preference of chemise was higher than teddy and camisole/Tap. By age, marital status, breast surgery type, and breast reconstruction of the subjects, there were not significant differences in tricot style preferences.

In the preferences of five neckline for sleepwear (round, v-shaped, square, sweetheart, and collared), there were significant differences in five neckline design preference scores ($X^2(4, N=75) = 61.989, p < .05$). The

preferences of round neckline and v-shaped neckline were higher than other neckline designs. The preference of collared neckline was lower than round neckline, v-shaped neckline, and square neckline. By age of the subjects, the differences of the preference score of round neckline were significant ($X^2(3, N=75) = 10.177, p < .05$). By marital status and breast reconstruction of the subjects, there were not significant differences in neckline design preferences. By breast surgery type of the subjects, the preference of v-shaped neckline was significantly different ($X^2(2, N=75) = 6.262, p < .05$).

In the preferences of five sleeve design (set-in, dolman, puff, sleeveless, and straps), there were significant differences in five sleepwear sleeve preference scores ($X^2(4, N=75) = 50.285, p < .05$). The preference of sleeveless was higher than set-in sleeve, dolman sleeve, and puff sleeve. The preference of puff sleeve was lower than dolman sleeve, sleeveless, and straps. By age, marital status, surgery type, and breast reconstruction of the subjects, there were not significant differences in sleeve design preferences.

In the preferences of five chest designs (no-lined, laced, tucked, yoke & gathered, bra-top), there were significant differences in five chest design preference scores ($X^2(4, N=75) = 35.289, p < .05$). The preference of bra-top was lower than other designs. The preference differences of no-lined chest design by marital status were significant ($X^2(3, N=75) = 12.495, p < .05$). The no-lined design preferences by single group were higher than the preferences by divorced group. By age, surgery type, and breast reconstruction of the subjects, there were not significant differences in chest design preferences.

5. Conclusions

Sleepwear could be important to improve post-mastectomy women' perception of their body. Between unclothed body cathexis and clothed (worn sleepwear) body cathexis for upper, lower, and total body sites, there were significant differences. The results suggest that the subjects were more satisfied with their clothed bodies than with their unclothed bodies. In particular, the improvement of breast satisfaction was distinguished, and the mean score of the bust was increased 1.11 (from 3.24 of unclothed to 4.35 of clothed) and the relative position of the bust was the 15th in 19 positions when unclothed and moved up to the first position when clothed. These results confirm previous researches in the intimate apparel area. Markee, Carey, and Pederson[7] stated that individuals may use clothing as a way to camouflage their perceived figure faults and temporarily improve body cathexis. Feather, Ford, and Herr[8] also proposed that being in uniform did improve basketball players' perceptions of their bodies.

In general sleepwear style, the short gown and long gown were the most preferred sleepwear style. In color preference, light blue, light pink, and ivory ranked as the most preferred colors. These are the same results of a market research which was conducted by Anderson[18] and targeted to the general female consumers. Before the breast surgery, women preferred cotton knit, plain-woven cotton, or satin. After the breast surgery, they needed comfortable fabrics, and more preferred cotton knit or plain-woven cotton than satin. Nylon tricot and lace were the least preferred fabrics after the breast surgery.

For women who had a mastectomy, the most preferred sleepwear style was chemise and teddy was the least preferred style. They preferred their sleepwear with round neckline or v-shaped neckline. Sleeveless was the most preferred sleeve design. They preferred their sleepwear with a yoke & gathered skirt or unlined bodice. The preference differences were revealed among age groups. In both camisole/top and chemise, women under 70 years old preferred these styles more than women over 70 years old. Women in the over 70 years old group preferred

nightgown and pajama more than teddy, camisole/tap, and chemise. They did not prefer sleepwear with lace in the chest. There were preference differences by marital status and breast surgery types of female breast cancer patients. The results of the study can have implications for post-mastectomy women, their families and physicians, and designers and manufacturers in the intimate apparel industry. Better counseling and additional preferred sleepwear designs for designs for breast cancer patients can be developed. In addition, the following recommendations are formulated for designers and manufacturers in the intimate apparel industry.

1. Results of this study show that sleepwear helped to improve the postmastectomy women's perception of their body; therefore, manufacturers in the intimate apparel industry need to develop various sleepwear designs for postmastectomy women.

2. Results of this study show that postmastectomy women wanted comfort and feminine sleepwear designs, such as chemise and nightgown, with simple trims and light colors. And, postmastectomy women in different age, marital status, and treatment method preferred different design features. Designers and manufacturers in the intimate apparel industry need to consider postmastectomy women's sleepwear design preferences according to the needs of postmastectomy women in different age, marital status, and treatment method.

3. The results of this study about sleepwear design preferences are initial information to assist designing appropriate sleepwear for postmastectomy women. Based on this study, designers and manufacturers in the intimate apparel industry need to develop appropriate design features and solutions for postmastectomy women.

Sleepwear designs in the research were standardized with several styles and features and may not have represented sleepwear with all special needs for female breast cancer patients. This research presented general and initial information about sleepwear for breast cancer patients, and the necessity of further study is suggested to investigate more special needs and more functional design solutions for them.

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