

ugliness or lack of attraction to the male may find her general relationship with men to be inadequate. She may also feel that she will make a poor sexual partner (Berscheid et al., 1973). Conversely, a positive body image with its related high self-esteem is strongly correlated with more enjoyment of sex, more sexual activity and more sexual partners (Berscheid et al., 1973).

Even a woman's social status can be affected by her feminine self-concept. Research by Berscheid et al. (1973) has suggested that a woman's physical appearance and related self-concept is extremely important in her ability to attract a desirable and socially prominent male.

Although the relationship between body image and self-esteem should hold true for men and women, there is evidence to suggest that it is not as strong in men as in women. Berscheid et al. (1973), for instance, found that 23 per cent. of their female sample showed some dissatisfaction with their bodies as compared with only 15 per cent. of the men.

Girls are authorised by the culture to experiment more with body appearance and clothing, they try out cosmetics and shift from one radical clothes style to another. But more than that, they are given the freedom to invest great energy and attention in the body. A girl who sits for a long period of time in front of the mirror studying her appearance and fussing with new body variations is doing the conventional thing (Fisher, 1973, p. 67).

Thus, in general, women seem to be more concerned about their bodies than men. Jourard and Remy (1957), studying body comparisons, reported that women are more interested in their body image than men. Kurtz (1969), furthermore, revealed that women have a more clearly differentiated notion of what they like or dislike about their bodies than men.

#### 5.2 BODY IMAGE AND THE BREAST

According to Renneker and Cutler (1952), breasts assume immense importance in women and are a woman's most prized physical possession.

Bard and Sutherland (1955) suggest that this emotional importance is due to the function of breasts both as nurturant organs and as important in psychosexual development. Although the importance of breast feeding has declined somewhat in Western cultures, there is still a universal connection between breasts and motherhood. As previously discussed, the importance of breasts as symbols of sexuality have been heightened by the media.

Gyllensköld (1976) goes so far as to suggest that the identity of certain women is firmly anchored in their breasts in particular. In addition, the ego and self-esteem of these women seem to be completely dependent on their visible femininity, i.e. on the breasts.

On the other hand, Berscheid et al. (1973), in their large sample study, found that the importance of breasts for how women feel about themselves has been grossly exaggerated. However, taking all of the body parts which contribute towards overall body image, they do concede that an intimate relationship exists between body image, physical attractiveness and self-esteem. In particular, how one feels about one's body has a strong effect on how one feels about one's own self generally.

### 5.3 BODY IMAGE AND THE UTERUS

While physical attractiveness refers specifically to external parts of the body, such as breasts and face, the term 'body image' can refer to other parts such as the uterus, which cannot be seen or even felt by the woman. The uterus in particular has been known since ancient times to be an organ endowed with symbolic and emotional significance (Veith, 1965). A review of the literature clearly substantiates Wolf (1970) when he says of the uterus that -

Because of its role in menstruation, pregnancy and childbirth, the uterus is central to those perceptions and attitudes of social role gender function, and body image in women that are usually referred to as the 'feminine self-concept' or the 'feminine identity' (p. 165).



Most of the research which has been done on the subject of the uterus and feminine self-concept relates to fear of the loss of this organ or the effects of actual loss through hysterectomy (Polivy, 1974). Research appears to deal exclusively with the reactions of hysterectomized women in Western culture. 'Culture' as a variable in the role of the breast and uterus in femininity has not been studied.

Wolf (1970), in considering the impact of class on reactions to hysterectomy, found that women of lower socio-economic classes were more emotionally affected than upper class women. These women believed that their womanhood was rooted in their ability to bear children, and that without a uterus they were not women.

Patterson and Craig (1963), in their examination of misconceptions governing the psychological effects of hysterectomy, have reported that women who had had hysterectomies did not consider themselves to be mutilated. These authors (1963) maintain that the lack of concern by the majority of their subjects was due to the fact that the uterus was invisible and therefore not important in body image representations.

There is considerable evidence to support a strong relationship between body image and feminine self-concept (Bercheid et al., 1973; Fisher, 1973). Certain authors (Patterson and Craig, 1963), however, have found that



the uterus does not play as important a part in this respect as the breast, possibly because the latter organ is highly visible whereas the former is not. It would seem that all the research in this connection, however, has been based on the emotional reactions of women of Western cultures and no comparable studies have been found relating to other cultures such as South African blacks. The present study is designed to explore this aspect of the issue.

#### 5.4 BODY IMAGE AND LOSS

The integrity of the body image is an important determinant of an individual's ability to adapt to external reality in a healthy and confident fashion. Any circumstances which impair, or threaten to impair, this integrity will inevitably be productive of some degree of anxiety, whether this is experienced consciously or not (Maddison, 1959, p. 10).

Both mastectomy and hysterectomy may be regarded as circumstances which impair, or threaten to impair, the body image.

Peretz (1970) defines loss as 'the state of being deprived of or being without something one has had' (p. 4).

By far the most severe loss suffered by an individual is the total or partial loss of a loved one. This may result from death or physical separation.

Every person is confronted with loss of one kind or another throughout the lifespan. Some forms of loss are rooted in the developmental process and are predictable. Examples of such losses may be found in the loss of the security of the womb at birth, the loss of youth and vigour in middle age or the loss of a mothering role when children leave home. Other losses are haphazard and unpredictable, like those caused by accidents or trauma of various kinds. Loss may follow illness or the loss of function.

Another type of loss may involve some aspect of the 'self' such as the loss of a body part or the loss of health resulting in some form of body change. Self attitudes and self definitions are also vulnerable to loss. In such cases, some loss of the 'self' occurs, and as in the case of all loss, the reaction is one of grief (Schoenberg et al., 1970). Peretz (1970) maintains that the strength of the grief reaction will depend on the degree of emotional investment in the lost person, possession, place or aspect of self.

Parkes (1974) suggests that grief is not a state but a continuous process which involves a sequence of clinical pictures which merge into and replace one another. Grief persists during a period of mourning and is concomitant with a feeling of deprivation and depression. It is only after the depression has been confronted and worked through that it finally lifts and recovery

occurs (Parkes, 1974).

#### 5.5 REACTIONS TO LOSS OF BODY PARTS

Schoenberg and Carr (1970) define body image as a -

... convenient abstraction referring to how one experiences, differentiates, conceives of and perceives his body and its parts, and to the relationship of his experience to reactions accompanying loss or change in the body (p. 120).

Reactions to the loss of body parts will depend, amongst other things, on the importance of the parts for survival (e.g. kidneys); for body image (e.g. hand, legs, hair); on the symbolic value assigned to the part (e.g. the breast, the uterus and genitals); and for function (e.g. sight, reproduction, hearing).

Cultures as diverse as those of Orthodox Jews and the Chinese pay respect to amputated limbs. Orthodox Jews bury the amputated limb so that when the person dies, he can be reunited with his lost body part.

According to the Talmud, all organs which are necessary to sustain life should be treated in this way. When medical missionaries introduced amputation into China during the nineteenth century, the Chinese demanded that the amputated limb be preserved and buried with the rest of the body after death (Schoenberg et al.,



1970). The authors write:

Whatever the original basis for these beliefs, there is an intrinsic wisdom in these cultural practices which should not be overlooked, as it is relevant to our present understanding of the psychology of mourning. It is not surprising that an individual might want a prized or loved part of himself to be disposed of with respect ... (p. 125).

These practices may also be seen as a cultural prescription for dealing with the anxiety evoked by the disruption of the body's intactness through surgery. In addition, the ritual burial of the amputated body part could be viewed as an expression of mourning.

Maddison (1960) states that in every instance of surgical loss there is a threat to the body image. He suggests further that all surgical body part removals may be unconsciously perceived by the patient as symbolically equivalent to castration. The threat will be heightened if the operation is a mutilating one. When the sexual organs are involved the threat will be further exacerbated.

Direct loss involving the surgical removal of body parts can lead to further losses of an emotional nature. The patient may perceive the reactions of significant others in her social milieu to her body change as a rejection or devaluation. Thus, a mastectomy or hysterectomy could mean not only the loss of a social contact organ but also

a discontinuity in a woman's pre-operative way of life (Melody, 1961). However, the effect on the body image should be viewed in the light of the subjective symbolic importance of the function of the uterus versus the appearance and the function of the breast.

#### 5.6 SUMMARY

The psychological sequelae of the loss of the uterus or the breast show considerable variation in the literature. Basic to the reaction is the woman's body image, which may be an expression of her emotional adjustment before the loss. Reactions to changes in the body image will depend on a variety of factors. The individual's vulnerability to loss, established coping patterns, the nature of the change and the lost part's conscious and unconscious significance to the subject, may all play a role.

## CHAPTER 6

### HYPOTHESES

A review of the literature on the breast and mastectomy, the uterus and hysterectomy and the impact of the two surgical procedures on body image and feminine self-concept appears to suggest a strong interrelatedness between these variables. However, no previous studies have been conducted which included a consideration of culture as a variable. In the present study, black and white women represented two widely different cultural groups.

Much of the literature on this subject is concerned with the relationship between a limited number of the variables involved at any one time. For example, Berscheid et al. (1973) investigated body image, physical attractiveness and self-esteem in American women. Drellich and Bieber (1958), on the other hand, investigated the impact of the loss of the uterus on self-image in American women. Polivy (1977), in addition, studied the loss of the breast and the feminine self-concept in American women.

While these studies are all concerned with aspects of



body image, femininity and threat of loss to or change in these, they are not directly comparable. In addition, in spite of the fact that many writers refer to the importance of cultural factors (Mead, 1949; Guze, 1969; Wolf, 1971; Katz et al., 1974), no studies examining these variables have been conducted.

Melody (1961), in discussing post-operative depression in hysterectomy, suggests that hysterectomy results in a social discontinuity of a woman's pre-operative life, as well as the loss of a valued social contact organ. In addition to the uterus, Melody (1961) lists other social contact organs, namely, the female breasts, the mouth and the skin surface of the body. Melody (1961) maintains that -

... the social roles available to an individual as well as one's body image, self-concept or self evaluation, are to a large degree determined by the social contact organs and their symbolic meaning to the individual (p. 412).

These interactions and reactions in turn are embedded in cultural prescriptions.

In the light of the above, it was considered important in the present study to include black and white women, as representatives of two diverse cultures, to investigate the role of the breast and the uterus in a woman's feminine self-concept. The following hypotheses were accordingly formulated for study:-

HYPOTHESES

H<sub>01</sub> - There are no differences between black and white women's feminine self-concepts before and after mastectomy.

H<sub>02</sub> - There are no differences between black and white women's feminine self-concepts before and after hysterectomy.

H<sub>03</sub> - There are no differences between black women's feminine self-concepts before and after mastectomy.

H<sub>04</sub> - There are no differences between white women's feminine self-concepts before and after mastectomy.

H<sub>05</sub> - There are no differences between black women's feminine self-concepts before and after hysterectomy.

H<sub>06</sub> - There are no differences between white women's feminine self-concepts before and after hysterectomy.

## CHAPTER 7

### METHODOLOGY

#### 7.1 SUBJECTS

Ten black and ten white female subjects were chosen from patients who had undergone radical mastectomy because of breast malignancy. A further ten black and ten white female subjects were selected from patients who were about to undergo a total abdominal hysterectomy with conservation of the ovaries for benign uterine disease. Hysterectomy is rarely performed because of malignancy and therefore no subjects with malignant diseases were available.

The black subjects (N=20) were drawn from the Hillbrow Hospital, Baragwanath Hospital and Laratong Hospital. The white subjects were selected from the Johannesburg General Hospital and from gynaecologists and surgeons in private practice in Johannesburg.

In all the hysterectomized subjects (N=20) the menstrual function was intact prior to their operations. In addition, none of these subjects had their ovaries removed at the time of the hysterectomy, ensuring that



normal hormonal production continued post-operatively. The mastectomy subjects were selected from a similar age group to the hysterectomy subjects so as to minimize distortion due to the natural reduction in hormonal activity after menopause. Subjects ranged in age from twenty-nine years to fifty-two years

## 7.2 DIFFICULTIES ENCOUNTERED IN SAMPLE SELECTION

### 7.2.1 The Incidence of Breast Malignancy in South African Blacks

While black South African women have among the highest incidence of cervical cancer in the world, the position is reversed in the case of breast cancer (Isaacson, 1982). According to Isaacson (1982), the incidence of breast malignancies in Soweto is six in a hundred thousand. The same author estimates that the incidence of breast malignancy among white South African women is sixty in a hundred thousand.

In this connection, it is interesting to note that between January, 1980, and July, 1982 (the period of the data collection for the present study), fifty-seven patients with early breast malignancy were referred to the Johannesburg General Hospital and treated by radiation. Of these fifty-seven women, forty-five were white and twelve were black (Browde and Nissenbaum, 1983).

### 7.2.2 Late Presentation of Black Women

Not only is the incidence of breast cancer lower among black women, but it is rare for black patients to present in the early stages of the disease where mastectomy has, until recently, been the treatment of choice. The majority of black women present to the hospitals in stage three and four of the disease.

For clarification, breast cancer is staged according to its local features as well as to the dissemination that has occurred. Early breast cancer refers to stages one and two. In stage one disease there is a lump in the breast of up to two centimetres in size and one or more axillary nodes are positive. There is no evidence of dissemination. In stage two disease the lump in the breast increases up to five centimetres and there is involvement of the skin of the breast. In stage three disease the axillary nodes are usually involved but there is no evidence of distant metastases. In stage four disease, irrespective of the size of the lump or involvement of axillary nodes, there is dissemination. Stages three and four patients are usually considered unsuitable for mastectomy and are treated with radiation.

Several reasons are postulated for the late presentation of black women. Early breast cancer is usually painless, making small breast lumps

easy to ignore. Black patients, who are dependent on their wages to provide or augment the family income, are reluctant to go to hospital until absolutely necessary. Ignorance as well as poverty are major blocks to seeking early treatment. In addition to being insecure about the loss of earnings, working women are often reluctant to subject themselves to the endless queues in overcrowded hospitals.

An additional contributory factor in late presentation to hospitals, although one that is difficult to assess, is that a number of women may consult traditional doctors or sangomas when they first become aware of their ill-health.

### 7.3 THE BLACK HYSTERECTOMY GROUP

The black hysterectomy sample was drawn from women admitted to the Hillbrow Hospital, as opposed to the black mastectomy subjects who were selected from Baragwanath and Laratong Hospitals in addition to the Hillbrow Hospital. One of the requirements for admission to the Hillbrow Hospital is that patients reside in Johannesburg or its environs. Four subjects were lost to the study when they could not be traced at their given addresses for the purposes of re-testing. It was assumed that they had given incorrect addresses in order to gain admission to the hospital and that they did not



trust the investigator sufficiently to supply the correct information to her.

#### 7.4 THE BLACK MASTECTOMY GROUP

Two subjects who were interviewed pre-operatively came from a rural area, to which they returned when they recovered from their operations. The post-operative interview was arranged to coincide with their return to the hospital for further treatment. For unknown reasons these women did not return and so were lost to the study.

#### 7.5 DIFFICULTY IN ANSWERING THE QUESTIONNAIRE

Two hysterectomy and one mastectomy subjects had to be discarded on account of the difficulty they experienced in answering the questions asked of them. A glaring example of this was the mastectomy subject who, in answer to the questions about the degree of satisfaction with the various body parts, stated in every case that she was extremely satisfied with every aspect of her body. In answer to a query about this, she explained that she was duty-bound to be completely satisfied with what God had given her. No amount of explanation would allow her to view the matter differently.

The nature of such difficulties of cross-cultural research will be discussed in Chapter 9. However, the result of the difficulties experienced in obtaining sub-

jects was that, although many more women were approached, the final sample size for inclusion in the present study was limited to forty.

#### 7.6 PROCEDURE

After assessing the suitability of a subject from information gained from a doctor or member of the hospital staff, the subject was visited in the ward the day before her operation was to take place. The investigator introduced herself, explained that she was engaged in research and asked patients if they would be willing to be interviewed. The investigator served as an interviewer for all the white subjects. In the case of the black subjects, a trained black female research assistant accompanied the investigator to ensure that the nature of the task would be clearly understood and to facilitate confidence.

In order to allay doubts on the part of black subjects as to the identity and motivation of the researcher, special pains were taken to emphasize that the researcher had no ulterior motives beyond those claimed in the questionnaire. In order to enlist the patient's cooperation without sensitizing her to the dependent variable, the questionnaire carried a cover story. This explained that the study aimed at improving the quality of doctor/patient relationship, nursing care and post-operative treatment with a view to enhancing

the patient's emotional well-being.

The pre-operative interview consisted of five questions which supported the cover story given and which were answered verbally (Appendix 1). These questions and answers were not scored. They were designed to facilitate rapport between the subject and the interviewer or the subject and the research assistant. In addition, it was seen as a way of obtaining anecdotal material. After this, an edited version of the Berscheid, Walster and Bohrnstedt Body Image Scale (1972) was administered. Subjects were informed at the end of the interview that they would be contacted approximately four months after their operations.

This was done and again the interview consisted of a number of open-ended questions and the answering of the identical questionnaire. All the white subjects were English-speaking and answered the questionnaire in English (Appendix 2). The black women answered either the English questionnaire or one that had been translated into Sotho (Appendix 3) or Zulu (Appendix 4).

The selection of subjects took place over a two-year period as difficulties were encountered in obtaining a sufficient number of black mastectomy and hysterectomy subjects. However, the period between the first questionnaire and the succeeding one was kept within a prescribed time period, namely, approximately four months.



Thus, new subjects were still being interviewed while others had already completed the follow-up questionnaire.

In all, four groups of ten subjects each were tested. These groups consisted of either black or white mastectomy or hysterectomy patients.

#### 7.7. THE FEMININE SELF-CONCEPT QUESTIONNAIRE

The first non-projective instrument for measuring body image was developed by Secord and Jourard (1953) and Jourard and Secord (1954). This original (BC) Body Cathexis Scale consisted of forty-six items, thirty-five of which referred directly to body parts and eleven of which referred to bodily functions. In order to explore the validity of the BC Body Cathexis Scale, Secord and Jourard (1953) correlated it with a more general measure of self-cathexis. Secord and Jourard (1953) reported correlations of .58 and .66 between the BC score and self-cathexis.

Berscheid, Walster and Bohrnstedt (1973) later modified and developed the Secord and Jourard Scale as a measure of body image, self-concept and satisfaction with intimate relations.

The Berscheid, Walster and Bohrnstedt questionnaire, made up of one hundred and nine items designed to elicit data on body image, physical appearance and self-esteem, was circulated to readers of 'Psychology Today'. The data

obtained from sixty-two thousand readers provided material for an extensive study (Berscheid, Walster and Bohrnstedt, 1973), which contributed significantly to the literature on body image and self-concept. The author maintained that earlier studies on body cathexis (BC) and self-cathexis (SC) had not paid enough attention to the careful exploration of distinct and logically independent perceptions of self. Instead, Berscheid et al. (1973) used a more refined measure of self-cathexis which they defined as self-esteem based on the work of Janis and Field (1959). According to Janis and Field (1959), internal consistency reliabilities of .84 indicated that a single factor accounts for all the common variance in the items, suggesting that the measure is unidimensional. Berscheid et al.'s (1973) analysis yielded a correlation between overall body image and self-esteem of .48 for females. Berscheid et al.'s (1973) analysis confirmed the hypothesis that one's feelings about one's body are an important antecedent to self-esteem.

To show the construct validity of the Berscheid et al. (1973) scale, the subscores and total score were correlated with the Janis and Field (1959) self-esteem measure. All of the correlations between subscores, total score and the self-esteem measure were found to be significant, ranging between .16 and .43 for females. The correlation reported between the total body image score and the self-esteem score were .45 for females -

correlations which suggest that the total scores also have considerable construct validity (Bohrnstedt, 1977).

Bohrnstedt's later study (1977) refined the questionnaire still further. The refined scale included twenty-four body parts, the Janis and Field (1959) self-esteem items, and an item to rate difficulty in relating to the opposite sex. This was included because Berscheid et al. (1973) had found a significant correlation between overall body image and difficulty in relating to persons of the opposite sex. In support of this finding, Bohrnstedt determined that the items composing his scale had an internal consistency of .89 as measured by Cronbach's Alpha.

Polivy (1977), when studying the psychological effects of mastectomy on a woman's self-concept, used an edited version of the Berscheid, Walters and Bohrnstedt body image scale. She reduced the original questionnaire to forty-nine items by editing irrelevant items which had no bearing on a woman's self-concept. A cluster analysis (Hoyt R) of her edited questionnaire revealed three main groups, namely, body image (BI), self-concept (SC) and satisfaction with intimate relations (SIR). While Polivy (1977) called the scale a body image scale, the total score reflected a measure of feminine self-concept which was made up of the three clusters.

Polivy's scale (1977), because of its appropriateness



for use with mastectomy subjects in particular, appeared to be the scale of choice for the present study, especially as it had the strong theoretical underpinning of the work of Berscheid, Walster and Bornstedt (1973). In the present study, the scale was modified slightly to accommodate cultural variations, as some of the items proved to be inappropriate for use with a black sample. Some items were difficult to translate accurately, while others proved to be irrelevant in a black context. An example of the latter was: 'How satisfied are you with your dating relationships during adolescence?' Difficulties with translation were experienced with: 'How satisfied are you with your general muscle tone or development?'

In general, the scoring of the scale followed the procedure recommended by Polivy. More specifically, the following steps were taken:-

1. A total score of femininity was obtained by summing up all the items falling into the body image, self-concept and satisfaction with intimate relations clusters (thirty-four items) as defined by Polivy (1977).
2. Subscores for each of the three constructs, i.e. BI (twenty-one items); SC (eight items); SIR (five items); involved in femininity were also obtained.

3. Two items, numbers 36 and 39, were used to obtain biographical information only. These items were not included in Polivy's (1977) three clusters.
4. Five items included in Polivy's (1977) questionnaire, as well as the present questionnaire, were not scored as they did not fall within the three clusters (items 22, 23, 24, 25 and 26).

#### 7.8 TRANSLATION OF THE QUESTIONNAIRE

Two senior lecturers in the Department of African Languages at the University of the Witwatersrand translated the English questionnaire into Sotho and Zulu. These two languages were chosen as it appeared that they were the most widely spoken languages in the Transvaal.

The translated questionnaires were then presented to a small sample of black women who were proficient in either Sotho and Zulu and English. They were asked to translate the questionnaire back into English. The translated English text was then compared with the original English text in order to ascertain whether there were any substantial differences in meaning, despite inevitable variations in vocabulary and syntax. In some items the back translations indicated necessary modifications in the original translation.

Because of the high reliabilities and extensive analysis of the scale by Bohrnstedt (1977) and Polivy (1977),

further investigation, e.g., item analysis, was considered unnecessary in the present study. The modifications made to the scale for use in South Africa were considered too insignificant to alter the reliability and consistency of the scale to any great extent.

#### 4.1.1.1. Item Analysis

The item analysis was carried out on the 10 items of the scale. The results of the analysis are presented in Table 4.1.1.1. The results show that the items were generally well distributed across the range of the scale. The items were also well correlated with the total score. The results of the analysis are presented in Table 4.1.1.1.

1. Analysis of the items of the scale was carried out using the following methods:

2. Analysis of the items of the scale was carried out using the following methods:

3. Analysis of the items of the scale was carried out using the following methods:

4. Analysis of the items of the scale was carried out using the following methods:



## CHAPTER 8

### STATISTICAL ANALYSIS OF RESULTS

The statistical analysis of a two-factor trials (pre-test/post-test) design has received considerable attention in the literature. In particular, Huck and McLean (1975) present a tight, cogent discussion of three possibilities that exist for analysis of data in this format. The three possibilities are:-

1. Analysis of Variance with a repeated measures trials factor.
2. Analysis of Variance of Gain scores (post-test scores minus pre-test scores).
3. Analysis of Covariance with pre-test scores as the concomitant variable.

Several difficulties are raised with respect to the use of the repeated measures ANOVA. Firstly, due to the linear model being different for this case, as opposed to a standard ANOVA, the between subjects Main Effects is conservative (too small), increasing the likelihood of a Type II error.

Secondly, the interaction F really deals with the treatment Main Effect. This is logical as prescores are expected to be similar across all levels of the factor. Thus, successful treatment effects will give rise to differential change over pre-and post-test trials (i.e. interaction).

Thirdly, should a significant interaction effect be obtained, theoretical difficulties in the area of alpha levels and Type IV errors are introduced, with respect to the satisfactory explication and elaboration of this effect (Levin and Marascuilo, 1972; Marascuilo and Levin, 1970).

As far as analysis of variance of gain scores is concerned, Huck and McLean (1975) demonstrate that this approach lacks the power of the covariance approach, though, in other respects, it is generally superior to the repeated measure ANOVA.

Therefore, Huck and McLean (1975) recommend using analysis of covariance with pre-test scores as the covariate as the most powerful, statistically correct, and yet parsimonious procedure, as well as the one least likely to introduce controversial theoretical issues.

Considering these points, two-way analysis of covariance with one covariate of prescores was employed in analyzing the data obtained. This method was used in an identical

manner for consideration of total questionnaire scores (Item 34), as well as for the more specific variables of body image, self-concept and satisfaction with intimate relations.

### 8.1 RESULTS

The mean and standard deviations of the total feminine self-concept scores are shown in Table 1. Tables 2, 3 and 4 contain the mean and standard deviation scores of subjects on each of the three subscales, BI, SC and SIR respectively.

Analysis of covariance of the data suggests that there is no significant difference between black and white women undergoing mastectomy or hysterectomy in terms of a total femininity concept ( $F = 1.78$ ,  $df = 1$ ,  $p > .05$ ) (Table 5).

In addition, no differences between the groups were found for BI ( $F = 2.12$ ,  $df = 1$ ,  $p > .05$ ) (Table 6); SC ( $F = .005$ ,  $df = 1$ ,  $p > .05$ ) (Table 7); and SIR ( $F = .106$ ,  $df = 1$ ,  $p > .05$ ) (Table 8). These findings support the null hypotheses of the present study.

The non-significant findings revealed by the analyses of covariance are depicted in Figures 1, 2, 3 and 4. Figure 1 shows pre- and post-test scores of the four groups on the total feminine self-concept score.



Figures 2, 3 and 4 show pre- and post-test scores of the four groups on the BI, SC and SIR scales respectively.

TABLE 1

THE MEAN AND STANDARD DEVIATIONS OF ALL SUBJECTS ON FEMININE SELF-CONCEPT (TOTAL SCORE)

|       | MASTECTOMY                       |                                  | HYSTERECTOMY                     |                                  |                    |
|-------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------------|
|       | PRE-SCORE                        | POST-SCORE                       | PRE-SCORE                        | POST-SCORE                       |                    |
| BLACK | $\bar{X} = 149.9$<br>$S = 13.80$ | $\bar{X} = 151.7$<br>$S = 10.56$ | $\bar{X} = 156.6$<br>$S = 12.42$ | $\bar{X} = 152.0$<br>$S = 19.43$ | $\bar{X} = 152.55$ |
| WHITE | $\bar{X} = 145.8$<br>$S = 19.93$ | $\bar{X} = 144.8$<br>$S = 17.57$ | $\bar{X} = 137.9$<br>$S = 13.33$ | $\bar{X} = 146.2$<br>$S = 13.34$ | $\bar{X} = 143.68$ |
|       | $\bar{X} = 147.85$               | $\bar{X} = 148.25$               | $\bar{X} = 147.25$               | $\bar{X} = 149.1$                | $\bar{X} = 148.11$ |

TABLE 2

THE MEAN AND STANDARD DEVIATIONS OF ALL SUBJECTS ON BODY IMAGE

|       | MASTECTOMY                      |                                 | HYSTERECTOMY                     |                                  |                   |
|-------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|-------------------|
|       | PRE-SCORE                       | POST-SCORE                      | PRE-SCORE                        | POST-SCORE                       |                   |
| BLACK | $\bar{X} = 97.5$<br>$S = 9.10$  | $\bar{X} = 101.6$<br>$S = 7.65$ | $\bar{X} = 105.8$<br>$S = 11.75$ | $\bar{X} = 102.3$<br>$S = 12.46$ | $\bar{X} = 101.8$ |
| WHITE | $\bar{X} = 94.9$<br>$S = 11.15$ | $\bar{X} = 94.4$<br>$S = 13.47$ | $\bar{X} = 90.2$<br>$S = 10.12$  | $\bar{X} = 97.10$<br>$S = 9.54$  | $\bar{X} = 94.15$ |
|       | $\bar{X} = 96.2$                | $\bar{X} = 98.0$                | $\bar{X} = 98.0$                 | $\bar{X} = 99.7$                 |                   |

TABLE 3

THE MEAN AND STANDARD DEVIATIONS OF ALL SUBJECTS ON  
THE SELF-CONCEPT SUB-SCALE

|       | MASTECTOMY                     |                               | HYSTERECTOMY                  |                               |                  |
|-------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------|
|       | PRE-SCORE                      | POST-SCORE                    | PRE-SCORE                     | POST-SCORE                    |                  |
| BLACK | $\bar{X} = 34.4$<br>SD = 3.627 | $\bar{X} = 31.6$<br>SD = 3.89 | $\bar{X} = 33.5$<br>SD = 2.42 | $\bar{X} = 31.5$<br>SD = 5.93 | $\bar{X} = 32.7$ |
| WHITE | $\bar{X} = 31.6$<br>SD = 5.74  | $\bar{X} = 31.3$<br>SD = 3.20 | $\bar{X} = 29.2$<br>SD = 4.21 | $\bar{X} = 30.4$<br>SD = 4.42 | $\bar{X} = 30.6$ |
|       | $\bar{X} = 33.0$               | $\bar{X} = 31.4$              | $\bar{X} = 31.3$              | $\bar{X} = 30.9$              | $\bar{X} = 31.6$ |

TABLE 4

THE MEAN AND STANDARD DEVIATIONS OF ALL SUBJECTS ON  
THE SIR SUB-SCALE

|       | MASTECTOMY                    |                               | HYSTERECTOMY                  |                               |                  |
|-------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------|
|       | PRE-SCORE                     | POST-SCORE                    | PRE-SCORE                     | POST-SCORE                    |                  |
| BLACK | $\bar{X} = 18.7$<br>SD = 5.03 | $\bar{X} = 19.4$<br>SD = 3.09 | $\bar{X} = 17.3$<br>SD = 3.56 | $\bar{X} = 18.2$<br>SD = 4.37 | $\bar{X} = 18.4$ |
| WHITE | $\bar{X} = 19.2$<br>SD = 5.09 | $\bar{X} = 19.1$<br>SD = 5.06 | $\bar{X} = 18.5$<br>SD = 2.17 | $\bar{X} = 18.9$<br>SD = 1.52 | $\bar{X} = 18.9$ |
|       | $\bar{X} = 18.9$              | $\bar{X} = 19.2$              | $\bar{X} = 17.9$              | $\bar{X} = 18.5$              | $\bar{X} = 18.6$ |

TABLE 5

ANALYSIS OF COVARIANCE SUMMARY TABLE FOR TOTAL FEMININE  
SELF-CONCEPT SCORE

| <u>SOURCE</u> | <u>Ss</u> | <u>df</u> | <u>Ms</u> | <u>F Ratio</u> |
|---------------|-----------|-----------|-----------|----------------|
| Surgery       | 10.66     | 1         | 10.66     | 0.0713         |
| Race          | 15.43     | 1         | 15.43     | 0.1032         |
| Interaction   | 266.67    | 1         | 266.67    | 1.7827         |
| Error         | 5235.76   | 35        | 149.59    |                |

TABLE 6

ANALYSIS OF COVARIANCE SUMMARY TABLE FOR BODY IMAGE SCALE

| <u>SOURCE</u> | <u>Ss</u> | <u>df</u> | <u>Ms</u> | <u>F Ratio</u> |
|---------------|-----------|-----------|-----------|----------------|
| Surgery       | 11.44     | 1         | 11.44     | 0.1273         |
| Race          | 4.94      | 1         | 4.94      | .0550          |
| Interaction   | 190.65    | 1         | 190.65    | 2.1203         |
| Error         | 3147.15   | 35        | 89.92     |                |

TABLE 7

ANALYSIS OF COVARIANCE SUMMARY TABLE FOR SC SCALE

| <u>SOURCE</u> | <u>Ss</u> | <u>df</u> | <u>Ms</u> | <u>F Ratio</u> |
|---------------|-----------|-----------|-----------|----------------|
| Surgery       | 4.644     | 1         | 4.644     | .263           |
| Race          | .285      | 1         | .285      | .016           |
| Interaction   | .088      | 1         | .088      | .005           |
| Error         | 617.268   | 35        | 17.636    |                |

TABLE 8

ANALYSIS OF COVARIANCE SUMMARY TABLE FOR SIR SCALE

| <u>SOURCE</u> | <u>Ss</u> | <u>df</u> | <u>Ms</u> | <u>F Ratio</u> |
|---------------|-----------|-----------|-----------|----------------|
| Surgery       | 1.4139    | 1         | 1.4139    | .2194          |
| Race          | .0018     | 1         | .0018     | .0002          |
| Interaction   | .6849     | 1         | .6849     | .1063          |
| Error         | 225.508   | 35        | 6.4430    |                |



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