CHAPTER FOUR

METHODOLOGY
4.1 Context:

At present breast cancer is a perplexing phenomenon. In 1900, cancer caused 3 per cent of all deaths. Now it is more than 33%, which is still rising. "Today, 10 million new cases of cancer are diagnosed globally each year, and the figure is expected to rise to twenty million by the year 2020" (Dasgupta, 2002). In U.K. over one-third of hospital beds are occupied by cancer patients. The figures are: 30% in 1980, 40% at present, and the estimated figures for 2010 is 50%. If the rates persist to grow then the estimates would be 100% in 2080. "What is more disturbing to note is that 70% of these patients will live in the countries that, between them, will have less than 5% of the resources for cancer control" (ibid).

"In India, breast cancer accounts for 11% cancer-related diseases and is prevalent among urban women. Over 80,000 new cases of breast cancer are reported every year in India. The incident is steadily rising and posing a great threat" (Sharma, 2001).

The first report of cancer incidence in Calcutta studied from the 50 data sources for a total of 11,700 newly registered cases during January, 1998 to December, 1999 revealed the presence of 22.7% breast cancer, followed by 17.5% cases with uterine cervix malignancies (Sen et al, 2002). By overcoming certain common local myths (1), the breast cancer patients, living in Calcutta and

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1) *Breast Cancer is a genetically transmitted disease.*

"Regular use of oral contraceptive pills causes breast cancer."

"Cold (not painful) growing Breast Lump is cancerous."

"Woman with a past history of Breast Cancer must not indulge pregnancy."

"To remove doubt, practice Breast self-examination inside a bathroom."

"It is wise to avoid close contact with a Breast Cancer patient."

"When it is incurable it is wise to save family from Harassment. Help me to die."
suburban areas, generally receive diagnostic and therapeutic interventions after 2 to 3 years from the onset of the problem 'within the breast'. The patients become more perplexed when they fail to get any positive comment from the doctors either about the cause of the disease or about the certainty of the cure.

"Chemotherapy helps least those, who need it most" (Plotkin, 1996). A comprehensive estimation of the overall incidence and mortality in cancer, done in 2000, showed that there have been 22% increase, as compared to 1990 (Parkin, 2001). Younger generation of local breast cancer patients, with academic and professional accomplishments, evaluating the situation by cost-benefit analysis, have remarked: "We wanted to live a quality life without sufferings whereas, in lieu, we are living yet with our sufferings."

Present researcher has not yet met any breast cancer patient who willingly avoids treatment to start with while met a few chronic patients who are eager to know the worth of a long life with the disease and the heavy cost demanded by the disease, for taking its care and maintenance.

Current views of Oncology have suggested:

(i) that cancer does not occur just by switching on a genetic mechanism;

(ii) that progression of cancer is a multi-step process; because it requires a cell to be sufficiently damaged and become cancerous and left alone. A cancer cell grows (multiply) until it kills its host;

(iii) that there are few 'complete carcinogens' which can cause the said progression (initiate, promote and stimulate the process);
(iv) that to avoid cancer, avoid contact with carcinogens or make environment free of carcinogens;

(v) that "it is not the genes of an individual that exclusively decide the presence or absence, static or progress of a disease, but the abstract relationship that the individual bears to the whole environment" (Kothari and Mehta, 2001).

4.2 Psychosocial Variables:

Is there any psychological or psychosocial variables which can activate the said progression directly or indirectly? If so, then that can be controlled to make psychosocial environ helpful to resist progression.

Quite a good number of published research papers were reviewed in the area of psychosocial aspects of breast cancer (Chapter One and Chapter Two) and, accordingly, the following set of variables were selected to ascertain the situation:

Independent Variables:
1. Hereditary (Familial) Influence.
2. Interpersonal (Familial) Relationship Influence.
3. Prolongation of the Disease (Chronicity).

Dependent Psychosocial Variables:
1. Perceived Family Charms.
2. Reactive Anxiety and Depression.
3. Locus of Behaviour Control.

Here, all the five sets of Dependable Variable measures bear ex-post-facto influences of the first two independent variables, respectively, when the
measures will be collected from the patients and their junior sibs. The influence of chronicity will be found reflected here over the test scores of two chronicity groups for comparison with the 'just diagnosed' group of patients.

The nature of distributions of the five sets of test scores, collected from the patients and their sibs, would reveal the influence of familial heredity, under statistical comparison — if any. Further, the nature of changes in the scores of two 'chronic patient groups', under statistical comparison, may reveal the effect of prolongation of life with disease over the test scores.

The above two expectations of the researcher rest on the fact that: (i) the mentality of two such patients remain open to variation due to delay in diagnosis and operation; and (ii) the mentality of metastatic Breast Cancer patients remain open to variation — because under MBC the disease generally crosses the boundary of the breast.

4.3 Concept of Dependent Variables:

(i) Family Life Charms:

Members of a family, through daily interpersonal behavioural interactions, develop a healthy interpersonal relationship — that reduce 'psychosocial distance' amongst them and generate a feeling of pleasantness, and a family charm. In case of breast cancer patients, some of them get supportive family members and peers and where the said 'family charm' is not lost. But where the family members and peers avoid them there the charm is lost. The said effect can be measured by appropriate scientific instrument. Patients with very low family charm rationalise it by self-devised strategy of ego-defense — "Surrender to fate".
(ii) Reactive Anxiety And Depression:

Reactive Anxiety and Reactive Depression, both refer to express psychic pain caused by a sudden psychic shock and for avoiding an apprehended gloomy reality. Truly, they bear no morbid character; they rather, are more akin to 'state anxiety'. Reactive anxiety and reactive depression subside when the situation changes or the state is altered. Here, the patient becomes upset when she is communicated by an authentic person of her incurable disease and of her limited life-span. It may be assumed that the more the patient remains alive with her sufferings the more she needs to develop strategy to cope with her own psychogenic stress.

Depressiveness is generally recognised in the Breast Cancer patient as a reactive emotional state in the form of gloomy look, feelings of low worth of self, and hopelessness, and pessimistic attitude. Here, the depression is generally non-psychotic and elicited by distressing experience of unexpected victimisation. It remains associated with anxiety in certain patients. It may be labelled as simple neurosis, accompanied by lethargy, low self-confidence and low vigour. It may be considered, here, as a situational reaction to some external shocking experience contributive to generate negative thinking in the 'cognitive triad' of Self, World around and Future life.

(iii) Locus of Behaviour Control:

Locus of an individual's behaviour control is considered here as the person's belief about causalities or happenings of personal life related to fulfillment of expectations. More precisely, whether the person makes him/her responsible for the consequences of a happening (reward or punishment) or
makes any other external factor responsible for that. Here, the patient's thought is explored to know her personal convictions about own health problems and expectations of recovery from illness — whether she accepts the onus or assigns that to any other external factor. In case of 'making self as responsible' it is described as 'internally controlled' and, otherwise, it is described as 'externally controlled'.

(iv) Concerns of Life (generating psychogenic stress) And Coping Strategy (the mode adapted to cope with stress):

Individuals vary in attaching importance to different objects of social life or things to achieve. Hindrances or obstacles to achieve goals accordingly generate stress in the individual. In his/her effort to achieve the goal by overcoming the barrier the individual has to cope with the stress. The said 'concern' and 'coping' of an individual varies also contextually.

Breast Cancer Patients, accordingly, are found interested with different 'concerns' and, that too, remain open to different life-situations as 'living a good span with the disease while no surety about recovery'. In her coping effort she takes resort to different ego-defenses. Her strategy and style in this regard reveal her nature to interpret life's distress through positive or negative ways and her approaches generate effective or ineffective coping with her psychogenic stress.

4.4 Instruments (To Collect Variables Related Measures):

(i) Charms In Family Life Perception Inventory (For Breast Cancer Patient):

The instrument (CFLP Inventory) has been structured, here, by Mukherjee (1998) by selecting twenty standard items from Perceived Social Life Information
Inventory (Bandopadhyay, 1993), after Coyne's Family Burden Perception Inventory (1987). Coyne et al (1987) reported ten such enquiry areas which revealed Factor Loadings within the range of .56-.83. With reference to those ten areas (as given below), altogether twenty questions were selected finally.

Ten Areas:

1. Burdened by indecisiveness  
2. Burdened by a feeling of exhaustion  
3. Burdened by social apathy  
4. Burdened by cost of treatment  
5. Burdened by gloomy future  
6. Burdened by low self-worth feeling  
7. Burdened by depressive feeling  
8. Burdened by sleeplessness  
9. Burdened by feeling of loneliness  
10. Burdened by 'down in the durns' feeling

The twenty items of this Custom-built Charms in Family Life Inventory are fitted with a 4-point response scale, respectively, to yield score within a range of 10-80 (along a dimension of Fully Agree, Agree, Disagree with Reservation, and Fully Disagree. The score rationale suggests here that the more the score goes above the score-norm of a respondent group the more the presence of psychological distress and distance in the respondent will be admitted. Test-retest reliability and contrast validity (between high and low charm respondents) were found fairly high (Displayed under Appendix One).

(ii) Hospital Anxiety And Depression Scale (HADS):

The HAD Scale is developed and standardised by Zigmond and Snaith (1982) and locally adapted by the present researcher in 1999, with high test-retest reliability coefficient (with local breast cancer patient in the Hospital). It is a self-rating scale with 14 items distributed equiproportionately for measuring depression and anxiety variables, separately. Each item is fitted
with four alternative answers of which one has to be selected by the informant. A cut-off score of 8-10 indicates the presence of clinically significant predominance of either of the two states in the patient concerned — at time of testing. The said two states are not considered here as two independent factors (Displayed under Appendix Two).

(iii) Rotter's Internal-External (IE) Scale:

It is a 29-item Forced-choice Self-report Inventory developed by Rotter (1966) and locally adapted by Bose and Chatterjee at the Department of Applied Psychology, Calcutta University, in 1998 with high test-retest reliability coefficient. There are two alternative answers for each item and the informant has to select either of them, which earns strong agreement with the informant's views (revealing his belief on either of the two loci of control). Out of the 29 items there are 6 buffer items (not to be scored). Maximum number of responses given by the informant help to identify him/her as either internally or externally controlled (Displayed under Appendix Three).

(iv) Cognitive Style Test (Blackburn, Jones and Lewin, 1986):

The CST was developed originally by Wilkinson and Blackburn (1981), later, modified by Blackburn et al (1986) and locally adopted by the present researcher (1998) to measure the degree of negative interpretations in different social settings — by involving the person in a social situation (Self and social world) where a future consequence is to be apprehended.

It consists of 30 short descriptions of daily life events and the informant has the freedom to choose one response only, out of four responses. "The events
are classified into three themes which relate to Beck's cognitive triad of self (events of interpersonal nature, relating particularly to self-image), world (situations which are more task-oriented) and future (dealing with anticipated responses and plans). Within each of the three categories, half the items are pleasant/rewarding situations and half are unpleasant/punishing. Each positive item is counterbalanced with negative item" (ibid, 1986).

Thus, the overall structure of the test yields six type of events with five items in each type. The responses are chosen to represent degrees of depressive distortions. The statements are listed in random order for degree of positive and negative attitude: 4 = very negative; 3 = negative with some qualification; 2 = positive with some qualification; 1 = very positive. The validity and reliability of the original scale and the present version have been found satisfactory (Specimen copy enclosed, Appendix Four).

(v) Coping Concerns Checklist (Short Form):

Devlen (1984) has developed this checklist with 22 items to explore how much the informant is concerned about his/her pain, sadness, anxiety, financial position, occupation, interpersonal relations, marital issues, the future, body image and lack of energy (slow down). The more his/her range of concerns would be wider the more his/her quality of life is poor; and the more the concerns linger the more his/her quality of life gets impaired. Before administration, the present researcher has checked the social acceptance of the items in a try-out study. The checklist is equipped with rating scales to evaluate modes of coping strategies and the coverage of resolution (Displayed under Appendix Five).
4.5 Selection Of Sample:

Cancer is not yet a notifiable disease in India, not to speak of Calcutta City in West Bengal. In the first report of cancer incidence from the population-based cancer-registry in Calcutta City (Sen et al, 2002) for the period 1998-1999, it is evident that there were 50 data sources comprising cancer hospital, secondary and tertiary case hospitals, nursing homes, diagnostic laboratories and death registration offices. Scrutinising the medical records of those places, it is observed that a total of 11,700 cases were registered during the period from January, 1998 to December, 1999. Of them, 35% registered cases were found in two specialised cancer hospitals, 22% in five government medical college and hospitals, and 19.4% in a cancer welfare home, mainly. Out of 11,700 cancer cases, the number of male patient is 6,093 and female patient is 5,607. The most frequently reported cancer sites in females are breast, followed by uterine cervix, gall bladder, ovary and other female genital tract organs. During the period 1998-1999, there were 1,250 registered breast cancer cases in Calcutta City and of which more than 1,000 hospitalised cases were found admitted in Chittaranjan National Cancer Institute and Thakurpukur Cancer Welfare Home (Displayed under Appendix Six). Under the permission of the authorities of the above three Institutions, 20% of the hospitalised breast cancer patients were randomly selected.

Out of the said pool of randomised sample from the three Institutions, 175 had immediate junior female siblings (sisters); while 140 of them belonged to 30-40 years age group, had at least high school level education, and brought up in a middle economic class Bengalee family. Finally, from the above matched group of 140 breast cancer patients, 100 cases were randomly selected.
(along with their junior siblings) to collect test data for the verification of the hypotheses stated under 4.4. The above 100 cases were then further stratified into the following three sample subgroups:

(a) Just diagnosed and treatment started \((N = 36)\).
(b) Under treatment for 2-3 years, before mastectomy \((N = 31)\).
(c) Under treatment above 3 years, mastectomised \((N = 33)\).

Details of socio-demographic characteristics of the sample has been described in Chapter Five.

4.6 Hypotheses (To be verified):

(i) Rationale:

Carcinogenesis and carcinomatosis are pathological states of the body while 'Thanatophobia' (a morbid dread of death) is a concomitant psychopathic symptom — emerges out of a conventional belief of incurability. Thanatophobia is common in local cancer patients, being indulged by an age-old belief in all those countries where it has not yet been a "notifiable disease" (Sen et al, 2000), particularly. The present researcher has assumed that (i) thanatophobia sets on when the disease is diagnosed and communicated formally to the patient concerned, irrespective of any family history of mental illness of him/her; (ii) the phobic influences become bold and more influential along with chronicity or continuity of the diseases; and (iii) chronic cancer patients (suffering more than 5 years) without any family history of psychotic disorders
are expected to be immensely benefitted by psychotherapeutic counselling, by curbing the phobic influences.

(ii) Research Hypotheses:

1st Hy : Perceived Family Charms of just diagnosed (treatment started) Breast Cancer patients remain free of psychogenic distress.

2nd Hy : Nature of Anxiety (in terms of HADS Scores) of just diagnosed Breast Cancer patients and of their siblings would reveal similarity, under statistical comparison.

3rd Hy : Nature of Depression (in terms of HADS Scores) of just diagnosed Breast Cancer patients and their siblings would reveal similarity, under statistical comparison.

4th Hy : Nature of Locus of Control (in terms of Rotter I-E Scale Scores) of just detected Breast Cancer patients and their siblings would reveal similarity, under statistical comparison.

5th Hy : Nature of Cognitive Style (in terms of Blackburn Cognitive Style Test) of just detected Breast Cancer patients and their siblings would reveal similarity, under statistical comparison.

6th Hy : Nature of Anxiety and Depression (in terms of HADS Scores) would reveal similarity, under statistical comparison, among Breast Cancer patient groups 1, 2 and 3.

7th Hy : Nature of Locus of Control (in terms of Rotter I-E Scale Scores) would reveal similarity, under statistical comparison, among Breast Cancer patient groups 1, 2 and 3.
8th Hy : Nature of Cognitive Style (in terms of Blackburn Cognitive Style Test) would reveal similarity, under statistical comparison, among Breast Cancer patient groups 1, 2 and 3.

9th Hy : Nature of Concerns, Coping and Resolution (in terms of Devlen's Coping Concerns Checklist) would reveal similarity, under statistical comparison, among the Breast Cancer patient groups 1, 2 and 3.

4.7 Steps Followed For Statistical Treatment Of Data :

(a) For the verification of research hypotheses, Test measures (Standard Scores) collected by the researcher, from the matched sample group, were treated statistically to find out different central tendencies (Standard Measures) and standard deviations. Distribution of Test Scores for a particular Test has been tabulated and displayed graphically showing different characteristics of a normal probability curve.

(b) To verify the "no difference hypothesis" with single group designed sample (as the sample size is more than 30) Student test has been computed to test the significance of difference between two means (at 0.01 level) - by using the formula :

\[ t = \frac{(M_1 - M_2) - 0}{SE_D} \]

(c) To verify the "no difference hypothesis" with the Means of three stratified sample subgroups the data were treated by one-way ANOVA test, developed by Fisher, as most suitable to the completely 'randomised design' and its significance is tested through the F.test (Between Groups Variance) / (Within Groups Variance).
4.8 Results And Interpretations :

(a) Each of the five Psychological Test measures has been tabulated, standard scores are determined, distribution of Test Scores are subjected to statistical tests, and displayed graphically. Five sets of Test Scores are analysed and inferences are drawn, respectively.

(b) Resting on the results of five Tests obtained from the Breast Cancer patients (on enrollment for treatment) and from their immediate junior sisters were treated by prescribed statistical treatment. Five no-difference hypotheses are verified and consolidated results are presented in a Table and interpreted to draw inferences.

(c) Influence of chronicity (continuity) on the five Test measures are then tabulated respectively for ANOVA treatment and F Test to ascertain their relationships (between group variance and within group variance).

(d) The spheres of pleasant and unpleasant perceptions and future anticipations and the concerns of coping with psychogenic stress of chronic patient groups (with and without metastasis) generated different response modes. Those modes were lastly arranged in order of Ranks for the two groups and compared by Rank Order Correlation Test.

(e) Results and Interpretations are presented, as described above, under Chapter Five.
Further References:


