Chapter Three
Design and Methodology
METHODOLOGY

The present study is designed to determine the level of stress among cancer patients as related to social support, locus of control and type of personality. In this chapter the research procedures for this study are presented. The design of proposed research, participants, instrumentation, procedures, and method of data analysis are described.

The present research is correlation in nature. In correlational research design researcher observer and measures relationships between variables which occur naturally without any assistance. It does not justify specifically calling one variable as independent variable and the other as dependent variable. Thus, any statement about casual effects connects between the variables on a correlational study unwarranted, yet correlational study as its own worth. Present investigation is primarily focusing on the following variables:

**Predictor variables:**

1. Social Support
2. Locus of Control
3. Type of Personality

**Criterion Variable:**

4. Stress

**3-1-Sample**

In social science research the sample size and its selection technique plays significant role. Sometimes it becomes difficult to specify the sample size because it varies from problem to problem of a proposed research. The researcher has to plan his research works by limiting its domain of his investigation.
Sampling is a process of selecting a small part of a population assuming that it should be representing the characteristics of the population of which it is a part.

The adequate sample size and the method of selecting sample size from the population enable an investigator to draw meaningful conclusion and helpful in making generalization about the population from which the samples were drawn. In present research the sample size consist of 200 cancer patients selected randomly, going under treatment in the department of Radiotherapy and Oncology in Sher-i-Kashmir Institute of Medical Sciences Srinagar Kashmir. They were categorized into three groups: Group I, comprised of 98 general cancer patients including lung, stomach, prostrate, skin, and other types of cancer, Group II comprised of 57 Oesophagus cancer patients and Group III comprised of 45 breast cancer patients. The age of the respondents ranged from 25 to 85 with an average age of 49.66 years. Their monthly income from all sources ranged from 300Rs. to 40000Rs. And with an average monthly income from all sources are 8024.231. Both genders (male and female) were included in this research. Almost all the patients were married.

3-2-Tools Used

Instruments used to collect data for this study were as follow:

3-2-1- Personal Data Sheet (PDS):

The PDS include the information under the following major headings: Name of the Patient, residence, age of the patient, sex of patient, type of cancer, period since diagnosis, marital status and type of cancer.

3-2-2- Questionnaire on stress

The Questionnaire on stress in cancer patients revised version (QSC-R23) developed by Herschbach et al, 2003 was used to measure the stress in cancer patients. It contains twenty three items that describe potential everyday stress in all
areas of life in detail and in everyday language. Each problem has to be answered twice; does it apply to the test person at present and – if it does apply – to what extent does this problem cause distress? The range of the response categories varies between 0 = the problem does not apply to me and 5 = the problem applies to me and is a very big problem. The items are grouped into five homogeneous scales: psychosomatic complaints, fears, information deficits, everyday life restrictions and social strains.

The construct validity has been demonstrated by correlations analysis with diverse psychological tests such as HADS depression (r = 0.75, n = 578), HADS anxiety (r = 0.73, n = 579) or SCL-90-R (r = 0.76, n = 171). The discriminant validity and the sensitivity to change has also been demonstrated (Herschbach et al, 2003). The reliability has been analysed via Cronbach's alpha, which is 0.89 (n = 1349) for the total score.

**3-2-3-Multi-dimensional Health Locus of Control (MHLC-Form C)**

Locus of control was measured using the Multi-dimensional Health Locus of Control (MHLC) developed by Wallston et al. (1978). The reliability coefficients range from .83 to .86 (Bairan, 1985). The MHLC consists of 18 statements of health beliefs with responses in a six-point Likert format, ranging from strongly disagree to strongly agree. The six items in each of the three categories (internal, powerful others, and chance) were summed yielding three separate scores. Total scores ranged from 6 to 36 with higher scores indicating more of one dimension versus the other orientations. Individuals were identified based on their overall beliefs as reflected by their highest score on the three subscales. Individuals were identified as having health beliefs predominantly associated with internal control, powerful others, or chance.

**3-2-4-Grossarth-Maticzek Personality Stress Inventory (GMPSI)**

Grossarth-Maticzek Personality Stress Inventory (GMPSI) is a stable measure of
personality developed by Grossarth-Maticzek and Eysenck (1988), was used to measure type of personality. This scale consists of 70-items and designed to measure six variables: (1) Type 1, or the cancer prone personality(similar to personality type C): (2) Type 2, or the CHD-prone personality(similar to personality type A): (3) Type 3, a hysterical type of personality: (4) Type 4, an autonomous, healthy type of personality Type 4 (corresponds closely to the personality Type B): 5) Type 5, described as rational-antiemotional: (6) Type 6, an antisocial, psychopathic type of personality. Each sub-scale consists of ten items except for type 4 which consists of 20 items. The first set (Type 4a) is in positive form, and the second set (Type 4b) is in negative form.

The GMPSI scores range from never true to always true. The response-scale ranges from 0.4 (i.e., total score range is 0.40) based on a 5-point response scale. The patient was assigned to a type based on scoring highest on that type subscale (regardless of scores for other type subscales).

The test-retest correlations are reported to be in excess of 0.80, (Grossarth-Maticzek & Eysenck, 1990). The construct reliability estimates for the six subscales are very good ranging from 0.76 to 0.92, average of 0.87(Amelang 1997). The mean construct reliability and test-retest reliability estimates are 0.89 and 0.78 respectively (Aron & Aron, 1994). These values satisfy levels required for a scale to be considered useful (Aron & Aron, 1994); that is, in terms of a personality scale where good internal consistency and stability is required.

Grossarth-Maticzek and Eysenck (1990) validated the scale over two sessions (separated by 6 months) occasions. While the internal consistencies were not reported for either scale, test-retest correlations were reported to be in excess of 0.80 (although whether this test-retest value reflected the full scales, or subscales, reliability
estimates was not specified). Despite there being no reports of a factor analysis of GMPSI items, subscale total scores were subjected to a principal components analysis and the results appeared to support the theoretical scale structure. For the unrotated solution, the types loaded clearly on two factors with Factor 1 loadings, Types 1, 2, and 5 subscales, opposing Factor 2 loadings, Types 3, 4, and 6 subscales. These results are consistent with findings of high scores on subscales 1, 2 and 5 being associated with illness, and high scores on subscales 3, 4 and 6 being associated with lack of illness (Grossarth-Maticek & Eysenck, 1990; Grossarth-Maticek, Eysenck, & Boyle, 1995).

3-2-5-Social Support scale:

Interpersonal Support Evaluation List – Short Form (ISEL-SF) (Pierce, Frone, Russell & Cooper, 1996). This measure is a shortened version of the 40 item Interpersonal Support Evaluation List (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). There are three areas in this scale which measures social support i.e. tangible support, appraisal support, and belonging support. The tangible is intended to measure perceived availability of material aid of the cancer patients; the appraisal subscale measures the perceived availability of a confident and trusted advisor of the cancer patients; the belonging subscale measures the perceived availability of someone with whom the respondent socialized. The scale has fifteen items, five in each area. There are nine positive and six negative statements. The response alternatives are completely true, somewhat true, somewhat false, and completely false.

The best five statements for each subscale are chosen based on factor analyses by Cohen et al. (1985). The fifteen items are based on previous factor analyses and were found to be the best five items for each subscale (Pierce et al., 1996). Retest reliability for the full measure has been reported as .87, and the retest reliability for
the subscales ranges between .71-.87 (Cohen & Hoberman, 1983). Internal consistency reliability has been documented as ranging from .77-.86 (Cohen & Hoberman, 1983). Convergent validity has been demonstrated by moderate correlations (r=.46) between the ISEL and the Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler & Ramsay, 1981) and with the involvement and emotional support subscales of the MOOS University residence environment scale (r = .62) (Cohen & Hoberman, 1983). Test-retest data reveal correlations between .77-.86 and internal alpha estimates of .88-.90.

The three subscales of social support scale are reasonably independent of one another as indicated by their moderate inter correlations, which are in the .3 to .50 range. Complete independence is neither desirable nor possible. The total social support score can be obtained by adding the scores of three subscales. The maximum possible score on the scale is 60 and minimum is 15.

3-3-Procedure:

Procedures used in the survey followed following process. This included the authority letter by Chairman of department of psychology to Head of Department of Radiology and forwarded to Director Of Sheri Kashmir of Institute Of Medical Sciences for cooperation and help of the investigator in administering the scales and questionnaires to gather information for the purpose of research work. All the patients were contacted individually for the testing session in 2007, four questionnaires, namely, The Questionnaire on stress in cancer patients revised version (QSC-R23), Multi-dimensional Health Locus of Control (MHLC), Grossarth-Maticek Personality Stress Inventory (GMPSI), Interpersonal Support Evaluation List – Short Form (ISEL-SF), and personal data sheet PDS were administered on patients. Each respondent took almost 45 minutes in answering all the questionnaires. They were
assured that their responses would be kept strictly confidential and would be used exclusively for research purpose. After the data collection scoring was done by the investigator.

3-4-Method of Data Analysis

For determining the impact of social support, locus of control, and type of personality on stress, the regression and correlation analysis were computed; One Way ANOVA test and independent samples t-test were used to compare the differences of demographic variables. All of the analysis has been done by SPSS.