CHAPTER III
METHODOLOGY

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CHAPTER III

METHODOLOGY

The validity and dependability of any research work is judged on the basis of the soundness and scientificness of its methodology. Therefore, the next step is to chalk out a suitable methodology to seek a scientific solution to the research problems through verification of its hypotheses. In the present research work, following methodological steps have been taken to obtain the empirical evidence in favour or against the problems and hypotheses stated in chapter II.

3.1 RESEARCH DESIGN :-

Research design is the plan and structure of investigation so conceived as to obtain answers to research problems (Kerlinger, 1986). It enables the researcher to arrive at valid, objective, accurate and economic solution of a researchworthy problem through empirical verification of its related hypotheses by way of collecting the disciplined data in this sense, it has been technically referred as a mechanism of controlling variances through the principle of “Max-
Con-Min”. “Max” part of this principle guides the researchers to go for maximization of the systematic or experimental variance by way of varying independent variable to such levels that the variations stand too apart from each other and the various experimental conditions could be as different as possible. “Con” refers to control over all such extraneous variables that would presumably influence the dependent variable. “Min” part stands for the minimization of error variance. Error variance are produced from those factors which are beyond manipulative control of the researcher. The best way to minimize the error variances is to execute the proper control over the independent and extraneous variable and to use objective and reliable measures in the investigation.

In the present study, a 2x2x2 factorial design was thought to be the best suited as the independent variables, viz., extraversion and neuroticism dimensions of personality and menstrual status were to be varied at two levels to study their main and interaction effects on the dependent variable, viz., marital adjustment. Therefore, a \((2)^3\) factorial design was employed to verify the relationship between
marital adjustment and three aforesaid independent variables or factors.

The investigation undertaken was of "ex post facto" in nature because the independent variables namely, E, N and menstrual status were beyond purposive manipulation of the investigator and the values of E, N and menstrual status were accepted as had been tapped by psychological tools. Since, the level of each independent variables are fixed, before conducting the investigation, it means that the investigator is interested only to find out the effect of a particular fixed value of the independent variable or factors. That is why, it is referred as fixed model in which the levels of factors are arbitrarily selected by the investigator who wished to generalize only these specific levels of the factors.

Further keeping in view of the comparative tone and nature of the first three problems and hypotheses, the extreme groups (dichotomous groups) comparison oriented "research design" has been thought to be the best suited one. Thus, it is to be registered here that in this piece of research only two, namely, "comparative"
and a 2x2x2 factorial design has been employed. The method of difference as the design of proof has been applied to ex-post facto scientific inquiry.

**FACTORIAL DESIGN pqr - 2x2x2 TYPE**

- **A - Menstrual Status**
  - $a_1$ - Menstrual Cycle Stage
  - $a_2$ - Menopausal Stage

- **B - Extraversion**
  - $b_1$ - Extraverted
  - $b_2$ - Introverted

- **C - Neuroticism**
  - $c_1$ - Neurotic
  - $c_2$ - Normal

- $p$ levels of A, where $p = 2$ (or $a_1$, $a_2$)
- $q$ levels of B, where $q = 2$ (or $b_1$, $b_2$)
- $r$ levels of C, where $r = 2$ (or $c_1$, $c_2$)
Fig. No. 3.1 (a)

**BLOCK DIAGRAM OF pqr (2x2x2) FACTORIAL DESIGN**

<table>
<thead>
<tr>
<th></th>
<th>b₁</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a₁</td>
<td>c₁</td>
<td>c₂</td>
</tr>
<tr>
<td></td>
<td>s₁</td>
<td>s₂</td>
</tr>
<tr>
<td>a₂</td>
<td>c₁</td>
<td>c₂</td>
</tr>
<tr>
<td></td>
<td>s₃</td>
<td>s₄</td>
</tr>
<tr>
<td></td>
<td>s₅</td>
<td>s₆</td>
</tr>
<tr>
<td></td>
<td>s₇</td>
<td>s₈</td>
</tr>
</tbody>
</table>

A - Menstrual Status -
(a₁) - Menstrual Cycle Stage
(a₂) - Menopausic Stage

B - Extraversion -
(b₁) - Extraversion
(b₂) - Introversion

C - Neuroticism -
(c₁) - Normal
(c₂) - Neurotic

Groups/Strata/Treatment combinations = 2 x 2 x 2 = 8

\[ \begin{array}{cccc}
  a₁b₁c₁ & a₁b₂c₁ & a₂b₁c₁ & a₂b₂c₁ \\
  a₁b₁c₂ & a₁b₂c₂ & a₂b₁c₂ & a₂b₂c₂ \\
\end{array} \]

No. of Ss in each stratum = 40
Total No. of subjects = 8 x 40 = 320
A SCHEMATIC DIAGRAM OF 2x2x2 FACTORIAL DESIGN

Fig. No. - 3.1 (b)
3.2 UNIVERSE AND SAMPLE:

Universe means all the number of any well defined class of people, events or objects. Thus, the whole group from which the sample has been drawn, is termed as universe or population. Because of its large size, it is either impossible or impractical for investigators to produce statistics based on all members of the universe. Therefore, it seems necessary to select a representative sample for estimating population characteristics, so that, generalization of inferences can be scientifically made. Goode and Hatt (1952) has pointed out the two main basic characteristics of a good research sample. These are representativeness and adequacy. Representativeness of a sample means that it must include all such possible characteristics of the population that divide it into mutually exclusive segments. Adequacy of the sample refers to its size. An adequate sample is one that ensures reliable results to whatever may be its size. Thus, in the present study stratified random sampling technique, based on probability principles is used to select an unbiased representative sample from the universe. To have homogenous and unbiased sample, in the present study the sample
has been drawn from the population of the female partners of the dual career couples inhabiting in different cities of the State of Chhattisgarh.

A stratified random sampling is that sample plan in which the researcher randomly takes subjects in his sample according to some known or specific characteristics of the population. In this method, the universe is divided into various homogenous subclass or strata according to one or more specific characteristics of the population. Each stratum consists of the members who are very much alike or homogenous. In the present study, the managers of various banks are split into a number of categories on the basis of four specific characteristics-

1. Menstrual Status  
   - Menstrual Cycle Stage
   - Menopausal Stage

2. Extraversion 
   - Extraverted vs Introverted

3. Neuroticism 
   - Neurotic vs Normal

This type of stratification is known as complex stratification.

Thus, in this study we have 2x2x2 or 8 strata as mentioned below -

1. With M.S. - Extraverted-Neurotic Ss
2. With M.S. - Extraverted-Normal Ss
3. With M.S. - Introverted-Neurotic Ss
4. With M.S. - Introverted-Normal Ss
5. M.S. - Extraverted-Neurotic Ss
6. M.S. - Extraverted-Normal Ss
7. M.S. - Introverted-Neurotic Ss
8. M.S. - Introverted-Normal Ss

Abbreviations
With M.S. - With Menstrual Cycle Stage
M.S. - Menopausal Stage
Ss - Subjects

A list of female partners of dual career couples of all offices, is prepared and each one is assigned only to one stratum. Then after a random sample of the female employees within each stratum is drawn. That is why, this type of sampling is known as stratified random sampling.

In the present investigation, it was felt necessary to control certain extraneous variables viz., job level of male and female partners, job status of the subjects and education, age etc. to overcome their expected influence on marital adjustment. Therefore, the variance attributed to the factors job level of male and female and job status of subjects were eliminated by holding the job levels of male and female almost the same and job status of subjects almost same.
While reviewing the literature concerned with marital adjustment, it was found that the span of married life may also influence the level of marital adjustment. Due to many years of experience of marital life the couples acquired the skills for good marital adjustment. In order to overcome the effect of this factor sufficient span of married life was allowed to both the groups viz., menstrual cycle stage group and menopausic stage. This, by keeping the age range of the subjects with menstrual cycle stage group between 40 to 45 years and subjects of menopausic stage to 50-55 years, researcher tried to minimize the effect of experience factor in the present study.

Level of education of all the subjects were graduate and above. The remaining possible factors were left to get under control through randomization. Here, stratified random sampling is reckoned suitable and more advantageous over simple random sampling because its each stratum is homogenous which admits small variations within it. Therefore, a small sample within each stratum is very likely to be a representative of that subclass within the population. Thus, the total
sample of a much smaller size would then represent the entire population which reduces the cost of study. Furthermore, the stratification of the population is likely to produce more precision than simple random sampling but requires a more thorough and detailed knowledge of the population for the stratification to be successful (Mohsin, 1984).

In the present study each factor is to be varied at two levels. On the basis of opposite extreme groups technique \((Q_1\) and \(Q_3\)) the Ss were divided into -

(A) With Menstrual Cycle Stage - Menopausal Stage
(B) Extraversion - Intraversion
(C) Neurotic - Normal

Thus in a 2x2x2 factorial design having at least 40 adult subjects in each cell, a total number of 320 subjects were randomly drawn following the stratified random sampling technique. The particulars of the finally selected sample is shown in Table No. 3.2.
<table>
<thead>
<tr>
<th>Groups</th>
<th>Extravert</th>
<th>Introvert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normal</td>
<td>Neurotic</td>
<td>Normal</td>
</tr>
<tr>
<td>With Menstrual Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S₁)</td>
<td>40</td>
<td>40</td>
<td>(S₅)</td>
</tr>
<tr>
<td>(S₂)</td>
<td>40</td>
<td>40</td>
<td>(S₆)</td>
</tr>
<tr>
<td>Menopausal Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(S₃)</td>
<td>40</td>
<td>20</td>
<td>(S₇)</td>
</tr>
<tr>
<td>(S₄)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

N = 320, n = 40
3.3 TOOLS :-

I. EYSENCK PERSONALITY QUESTIONNAIRE (EPQ)

(INDEPENDENT VARIABLE MEASURE)

Since the population under the investigation was that of adult subjects and the two independent variables were Extraversion and Neuroticism as specified by Eysenck, to measure these E and N dimensions of personality, a Hindi version of Eysenck Personality Questionnaire (EPQ) prepared by Jitendra Mohan (1985) was reckoned suitable. This test is based on original EPQ constructed by H.J. Eysenck (1978) and mainly useful to tap E and N dimensions in adults ranging in age from 17 years and above. It has 100 items in all, of which 25 are for tapping extraversion (E), 25 for neuroticism (N), 25 for psychoticism (P) and 25 for measuring to tell a lie (L). Thus, it has four subscales E, N, P, and L.

The questionnaire is highly reliable as its split-half reliabilities for the scales were calculated by Rulon’s (Odd-even) formula, which does not require correction for length. The overall split-half reliabilities of E, N, P and L scales of EPQ (Hindi version) are 0.69,
0.86, 0.36 and 0.78 respectively. The test-retest overall reliability for scale E is 0.93, for scale N is 0.96, for scale P is 0.85 and for scale L is 0.96 after a one month time gap between test and retest.

After the review of concerned literature, it was found that the dimension of psychoticism and intelligence have no significant bearing upon marital adjustment. So, these dimensions are not incorporated in the present study.

II. MARITAL ADJUSTMENT QUESTIONNAIRE :-

Marital adjustment questionnaire revision (1999) - This measure of marital adjustment is constructed and standardized by Kumar and Rohatgi (1985) consists of twenty-five ‘yes-no’ type items. The area-wise distribution of items is given in Table 3.3(a).

<table>
<thead>
<tr>
<th>Area</th>
<th>Item Nos.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sexual</td>
<td>9, 20, 23, 25</td>
<td>4</td>
</tr>
<tr>
<td>2. Social</td>
<td>3, 4, 5, 6, 12, 14, 15, 18, 19</td>
<td>9</td>
</tr>
<tr>
<td>3. Emotional</td>
<td>1, 2, 7, 8, 10, 11, 13, 16, 17, 21, 22, 24</td>
<td>12</td>
</tr>
</tbody>
</table>
Reliability :-

The split-half reliability, correlating odd-even items, applying the Spearman-Brown formula for doubling the test length, was found to be 0.49 (N=60) with an index of reliability of 0.70.

The test-retest reliability was also studied, it was found to be 0.71 (N=60) with an index of reliability of 0.84. The retest was given with a time interval of 3 weeks.

The r-values, 0.49 and 0.71 respectively, were found to be significant at .01 level, showing that the questionnaire was reliable both in terms of its internal consistency and stability of scores.

<table>
<thead>
<tr>
<th>Table - 3.3 (b)</th>
<th>Showing split-half and retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-half</td>
<td>N</td>
</tr>
<tr>
<td>Split-half</td>
<td>60</td>
</tr>
<tr>
<td>Test-retest</td>
<td>60</td>
</tr>
</tbody>
</table>

Validity :-

The face validity of the questionnaire appeared to be fairly high as the items were prepared following intensive interviews of 100 married couples regarding their concept of happy married life.
The content validity was adequately assured as only those items were selected for the initial questionnaire for which there was 100 percent agreement among the judges.

Only items which showed a fairly high discriminating value following item-analysis were selected for the final questionnaire. The diagnostic meaningfulness of the items at the time of final selection was also taken into account.

The questionnaire was also validated against Singh's Marital adjustment inventory (Singh, 1972). The coefficient correlation between the questionnaire and Singh's marital adjustment inventory for a group of 20 wives was found to be 0.71 with index of reliability of 0.84.

Table 3.3 (c)
Showing correlation between MAa and MAI

<table>
<thead>
<tr>
<th>N</th>
<th>r-value</th>
<th>Index of reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>0.71</td>
<td>0.84</td>
</tr>
</tbody>
</table>

In a recent study, Archana Shukla (1994) has noted significant positive correlations between MAa and DAS (Spanier, 1976), and
MAa and MAT (Locke and Wallace, 1959) for single career as well as for dual career couples.

Table 3.3 (d)

Showing correlations between MAa, DAS and MAT

<table>
<thead>
<tr>
<th></th>
<th>Single Career Couples (N=75)</th>
<th>Dual Career Couples (N=75)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husband</td>
<td>Wives</td>
</tr>
<tr>
<td>MAa &amp; DAS</td>
<td>0.96**</td>
<td>0.95**</td>
</tr>
<tr>
<td>MAa &amp; MAT</td>
<td>0.57**</td>
<td>0.77**</td>
</tr>
</tbody>
</table>

* Significant at .05 level  
** Significant at .01 level  
*** Data have been provided by Dr. Archana Shukla of Lucknow University, U.P.

Scoring :-

(a) Marital adjustment score for the husband or the wife :-

A 'yes' response is assigned a score of 1 except for items 4, 10 and 19 in which case reverse is applicable. The sum of these values gives the marital adjustment score for the husband or the wife. Since the responses contributory towards marital adjustment are given a score, the higher the total score, the higher would be the marital adjustment of the husband or wife.
(b) Marital adjustment score for the couple:

To get a single marital adjustment score for a couple, it is recommended that a score of 1 should be given, if both partners (husband and wife) answers an item as ‘yes’ showing their agreement except for items 4, 10 and 19 in which case the reverse is to be applied. Since the agreement shown for the responses contributing towards marital adjustment is scored, the higher the total score the better would be the marital adjustment of the couple.
3.4 PROCEDURE :-

After explaining the objectives of the research work, permission was obtained from the subjects of the selected offices to administer the questionnaires. A good rapport was established with subjects. It was assured that subject's responses and their identities would be kept in strict confidence and not disclosed to anywhere. Thus, they are free to give their answers comfortably and honestly, whatever they felt. In this way, Ss were encouraged to give their proper cooperation during the testing.

To get a final sample of at least 40 cases in each cell of 8 cells of 2 x 2 x 2 factorial design, stratified random sampling method was used. From initial population of 1500 female employees, first of all Hindi version of Eysenck's personality questionnaire prepared by Jitendra Mohan (1985) was administered. The printed instructions given on the cover page of the questionnaire were explained to the subjects before the administration. Generally, the subject took 20 to 30 minutes to complete the test.

Menstrual status of the subject was made known through a written question.
After this the scoring was completed according to the scoring system prescribed by the authors of the tests. Then after, subjects were classified into with menstrual cycle status and menopausal stage, neurotic and normal and extraverted and introverted groups by using two opposite extreme groups technique with the help of $Q_3$ and $Q_1$, as cutting point. Thus, using stratified random sampling technique, final samples were selected having 40 cases in cell of 8 cells design, making a total of 320 subjects i.e. 160 with menstrual status and 160 menopausal female partners.

Finally, identified 320 cases were subjected on marital adjustment scale by P. Kumar and Rohtgi (1999) to measure their marital adjustment status.

After establishing rapport following instructions were given to each of the subject.

"Some statement related to marital adjustment are given below. Each statement has two options before it, say yes or no. Read carefully to every statement, putting a tick mark (√) in one of the options before it, according to your choice. The answer given by you, would be kept in strict confidence. Your responses will be utilized only for
research purposes. Therefore, kindly express your choice freely on every statement. You must have to choose only one option for each statement.

After giving the instruction to each subject, Ss were asked to give their response on any one option by putting a (√) mark before every statement. Thus, for all 25 statements, Ss responses were obtained. Generally, each subject took 20-30 minutes to complete the marital adjustment questionnaire.

After obtaining the responses of all 320 cases on marital adjustment questionnaire, the questionnaire was put to scoring as prescribed by the authors of the questionnaire as described under caption ‘tools’. Thus, the total scores obtained by each subject on marital adjustment was computed by adding all the scores of 25 items. The maximum score would be 25 and the minimum could be 0. Thus, the total score of each 320 cases were separately computed on marital adjustment.

The obtained data were further analysed by using relevant statistical tools as prescribed in the next chapter “Analysis and Interpretation.”