Chapter – 3
Research Methodology

3.1 INTRODUCTION

The research methodology section put forward the plan and design of the study. It includes the scope of the study, objectives, hypotheses, validity and reliability of instruments, major techniques and processes for data analysis. This study is descriptive in nature because in this study relationships among the various independent and dependent variables were established.

The present study is focussing on Stress Management in Central Armed Police Forces. The study analyses various sources of stress in CAPFs with the help of factors like work load, long working hours, job insecurity, lack of participation in decision making and lack of fairness at the workplace other than the domestic issues. The study further analysed the consequences of stress in CAPFs and also tried to know the personal behaviour in Central Armed Police Force's personnel. The present study also describes the suggestions to control the stress in CAPFs through different factors such as policies and security, counselling, monitoring of stressor, stress management training and self-management.

This study follows all the steps of scientific research by using the quantitative methods of data analysis. The validity and reliability of the survey instrument was also established in the study by using suitable methods.

3.2 SCOPE OF THE STUDY

There are good opportunities for the researchers to conduct study on the topic "A Study on Stress Management Practices in Central Armed Police Forces" with similar or different objectives in different cities and states of the country. There are good scopes for further investigation if the study separately focusses on different divisions of armed forces like BSF, CISF, CRPF, etc. Researchers have carried out the review from

different government portals, websites, print journals, online articles, to identify the work done in a particular field and to identify the future scope in specific areas.

Table: 3.1 Scope of the Study

Area	Extent
Theoretical/Conceptual Scope	Theoretically, the study is limited to various sources of stress and suggestions to control the stress in CAPFs. Along with consequences of stress in CAPFs and personal behaviour of CAPF personnel.
Regional/Survey Area	Assam
Selected Industry and Firms	Central Armed Police Forces personnel
Sample Size	400 respondents

3.3 OBJECTIVES OF THE STUDY:

The following are the objectives of the research work undertaken:

1. To find out the sources of stress in the CAPF Personnel.

2. To examine the level of stress amongst the CAPF personnel.

3. To examine the influence of stress on the personal behaviour of the CAPF Personnel.

4. To examine the consequences of stress on CAPF Personnel with regard to professional development.

3.4 RESEARCH HYPOTHESIS:

Null Hypotheses:

H_0 There is no significant relationship between the various demographic variable and level of stress amongst CAPF personnel.

H_0 There is no significant influence of Stress on Personal Behaviour of CAPF personnel.

H_0 There is no significant relationship between consequences of stress with regards to professional development of CAPF personnel.

Alternative Hypotheses:

H_1 There is a significant relationship between the various demographic variable and level of stress amongst CAPF personnel.

H₁There is a significant influence of Stress on Personal Behaviour of CAPF personnel.

H₁There is a significant relationship between consequences of stress with regards to professional development of CAPF personnel.

3.5 THEORITICAL FRAMEWORK OF THE STUDY:

The theoretical framework of the research study is based on impact of sources stress like factors affecting the personal behaviour of Central Armed Police Forces Personnel and impact of various measures on stress in Central Armed Police Forces and the conceptual framework of the study of impact of sources on personal behaviour of Central Armed Police Forces are as Work Overload, Long Working Hours, Job Insecurity, Lack of participation in decision making and lack of fairness at work place and also the conceptual framework of the study on impact of various measures on stress management are as polices and security, counselling, monitoring of stressor, stress management training and self-management which are also diagrammatically represent as below:

3.5.1 Conceptual Framework of the Study: Impact of Sources of Stress on personal behaviour of CAPFs

Work Overload

Long Working Hours

Job Insecurity

Lack of Participation in Decision Making

Lack of Fairness at Workplace

Personal Behaviour of CAPFs
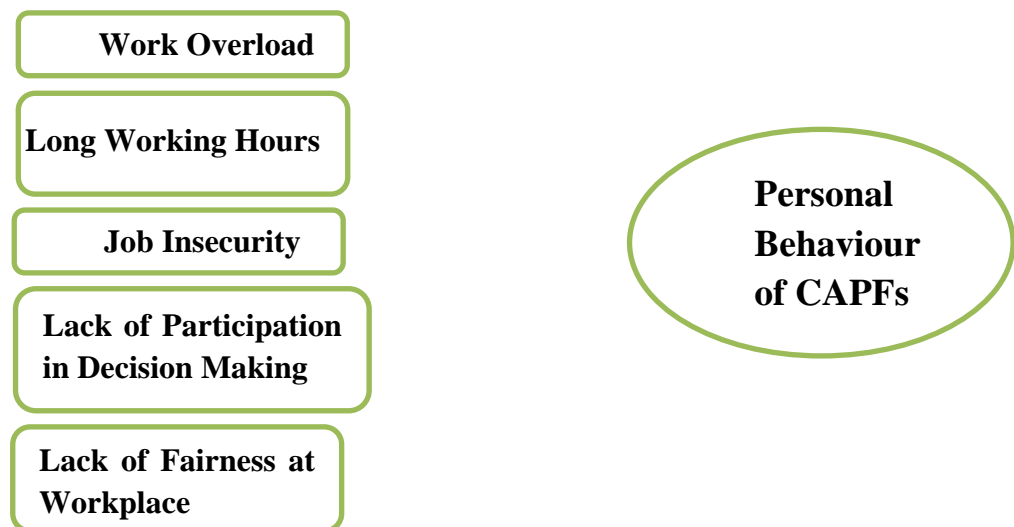
Figure 3.1 Conceptual Framework of the Study: Impact of Sources of Stress on personal behaviour of CAPFs

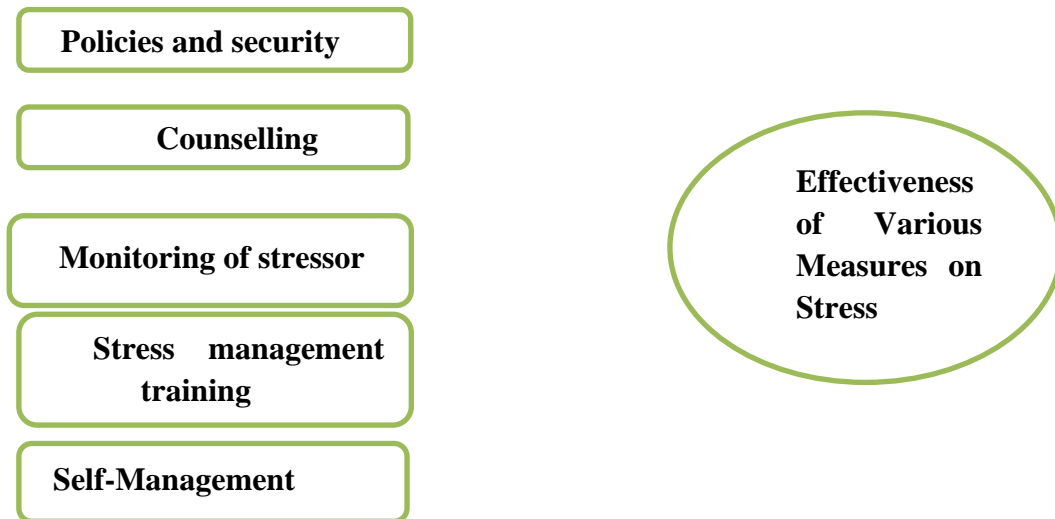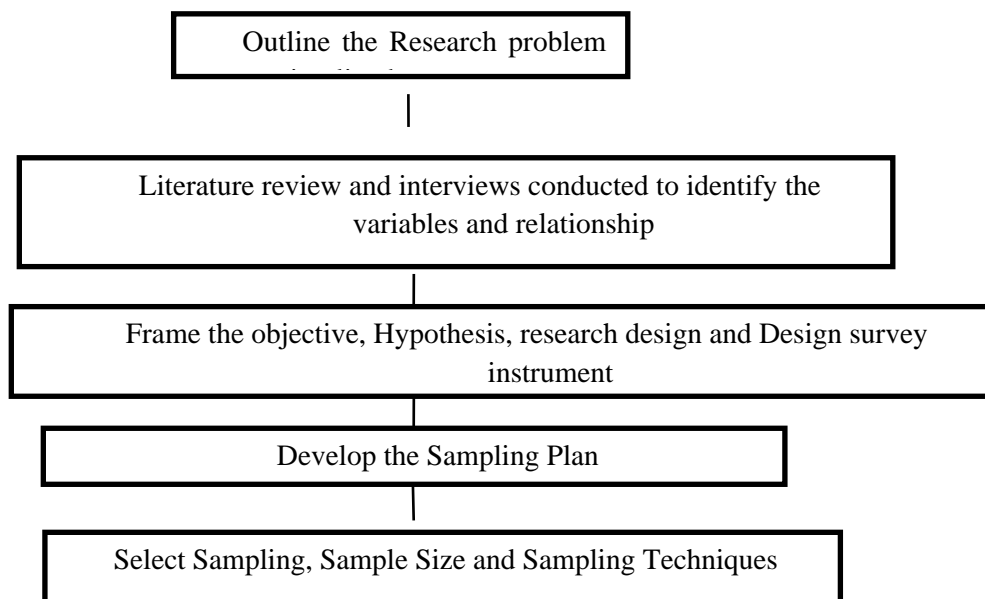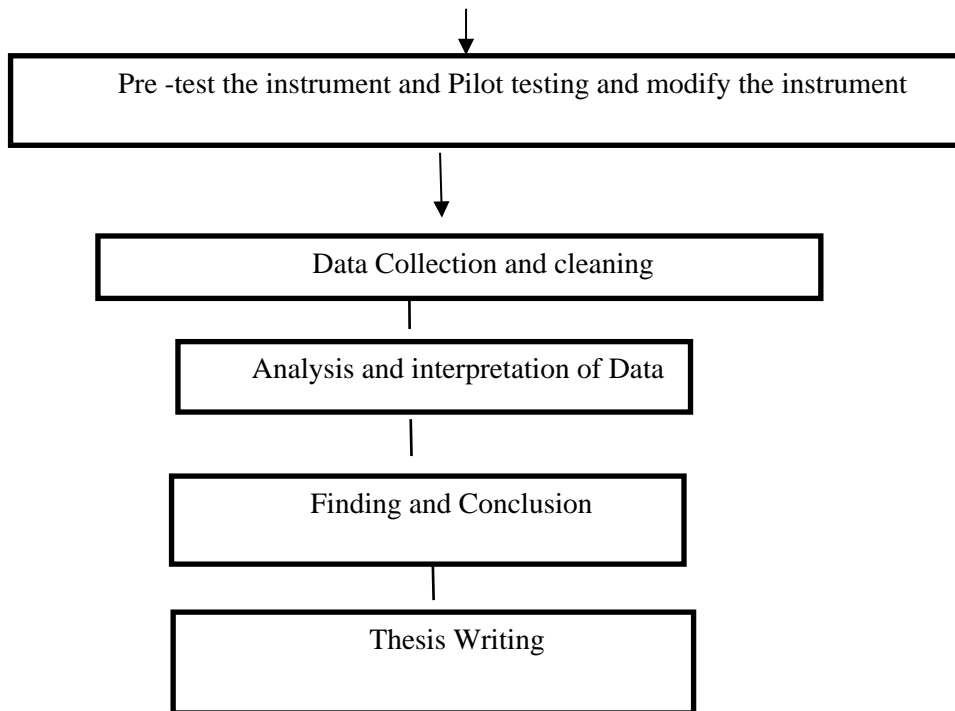## 3.5.2 Conceptual Framework of the Study: Impact of Various Measures on Stress *Management*

Figure 3.2 Conceptual Framework of the Study: Impact of Various Measures on Stress Management

3.6 RESEARCH PROCESS

Research is systematic and scientific. The research process is cyclic and interwoven with one another at every stage. The present research follows the research steps as outlined in the flow chart shown below (Refer Figure 3.3)

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┌──────────────────────────────────────────────────────────┐
│  Pre -test the instrument and Pilot testing and modify the instrument  │
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                              │
                              ↓
      ┌──────────────────────────────────────────┐
      │        Data Collection and cleaning        │
      └──────────────────────────────────────────┘
                              │
         ┌────────────────────────────────────┐
         │     Analysis and interpretation of Data     │
         └────────────────────────────────────┘
                              │
         ┌────────────────────────────────────┐
         │           Finding and Conclusion            │
         └────────────────────────────────────┘
                              │
         ┌────────────────────────────────────┐
         │              Thesis Writing                  │
         └────────────────────────────────────┘
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Figure 3.3 Research process framework

3.7 RESEARCH DESIGN

The study explored all the factors related to stress and stress management relying on quantitative research using different statistical tools and techniques like Descriptive Statistics, Exploratory factor analysis (EFA), Cronbach's Alpha test, Kaiser-Meyer-Olkin (KMO) measure and Regression analysis. The study includes surveys, questionnaires, journals, magazines, reports and previous studies to collect the primary data and the secondary data. The researcher had deeply gone through quantitative and qualitative secondary data which is collected from different sources and used it effectively in data analysis of present study. The study has identified the variables of different constructs and established the relation between them. The study worked on perfect sample size and achieved good results which are reliable and generalizable. IBM SPSS Statistics 20 software is used in the study to carry out the data analysis.

3.7.1 DATA COLLECTION

To the present study data from both the primary and secondary sources have been collected'

Primary Data Sources: A structured questionnaire was used to collect the Primary data from members of Central Armed Police Forces (CAPFs).

Secondary Data Sources: Secondary data has been collected from the various journals, magazines, various published or unpublished reports, dissertations available at different institutions and newspapers to draw a general background and overall scenario in a cross-state context.

3.7.2 SAMPLING METHOD: Judgement Sampling. All the respondents who have been selected belong to the CAPF personnel who are currently working in Assam.

UNIVERSE OF THE STUDY: CAPF personnel in ASSAM.

Table 3.2Total Strength of Central Armed Forces (Approx.)

Sl. No.	CAPF	India	North East	Assam
1	BSF	265000	50000	10000
2	CRPF	313634	35000	19000
3	CISF	163590	4000	3000
4	ITBP	89432	15000	2500
5	SSB	94261	20000	9000
6	Assam Rifles	65143	62000	3000
7	NSG			
TOTAL		991060	186000	43500 (Excl. Assam Rifles)

Source: Various Official websites

3.7.3 DETERMINATION OF SAMPLE SIZE: As the population size is finite, the total population of all CAPFs are 991060 and the Sample size determination by use of the formula, Taro Yamane formula **(Yamane 1973)** is indicated as below:

$$n = \frac{N}{1+ N e^2}$$

Where,

n = Sample Size = ?

N = Population size = 43500

e = error (0.05) reliability level 95%

So, Sample size is calculated as

$$n = \frac{N}{1+ N e^2}$$

$$n = \frac{43500}{1+ 43500* (0.05)^2}$$

$$n = \frac{43500}{1+ 43500 * 0.0025}$$

$$n = \frac{43500}{1+ 108.75}$$

$$n = \frac{43500}{109.75}$$

n = 396.36

n ≈ 400 (approx.)

So, for a finite population of 43500 CAPF personnel in Assam except Assam Rifles the sample size is **400** CAPF personnel.

The sample size of 400 CAPF personnel selected from deployment of CAPFs in the geographic area of Assam as BSF -100, CRPF -100, CISF -100, ITBP -50and SSB -50. Whileselecting respondents from different forces the scholar used the judgement sampling on the individual forces.The CAPF personnel currently posted during the study in Assam are having Pan India service experience. Therefore, the selection of respondents from the individual forceisbased on the total strength of the CAPF. Based on the above reasonsthe scholar selected respondents from the individual forces as the100 respondents from the CAPF having strength more than 150000 and selected 50 respondentsfrom the CAPFs having strength less than 150000.

3.8 TOOLS OF DATA COLLECTION: Structured Questionnaire

Questionnaire Designing:

The data from the respondents was captured with the help of a structured questionnaire which was particularly designed for present study. The statements of the questionnaire were adopted from the relevant studies from the literature on similar topics.

The questionnaire was classified under the various sections as below: Demographic profile of the respondents:

This section includes the gender, age, educational qualification, position(rank), number of years in CAPFs and marital status of the personnel. The statements used in the questionnaire were obtained from different studies, the validity and reliability were checked before the finalization of the questionnaire. The scale used in the questionnaire was 5 Point Likert Scale.
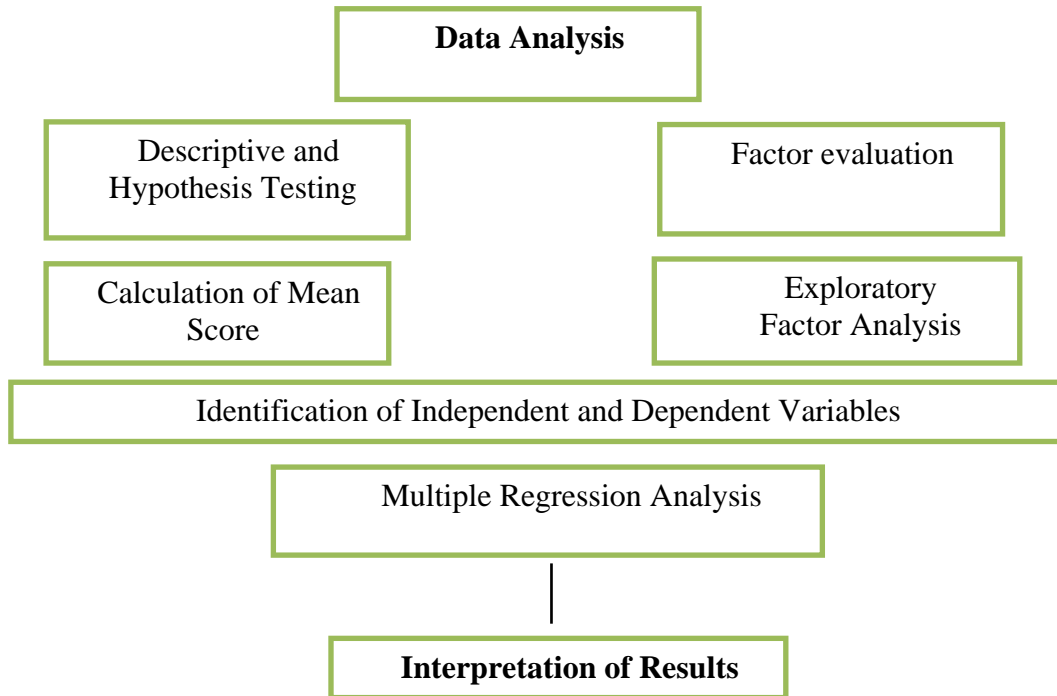
3.9 TOOLS OF DATA ANALYSIS

Figure 3.4 Procedure Followed for Data Analysis

3.10 STATISTICAL TOOLS USED

Mean Score: Mean score is a robust method which is popularly used for data analysis. Mean score is calculated when the data is collected on interval scale. While calculating the mean score the number of responses for a particular option is multiplied with the value of that option. The product of all the values is added and then divided by the sample size. The result is termed as the mean score.

Factor Analysis: Factor analysis is a technique that is used to reduce a large number of variables into fewer numbers of factors. This technique extracts maximum common variance from all variables and put them into a common score. Principal component analysis is the most common method used by the researchers to starts extracting the maximum variance and put them into the first factor.

Factor loadingis basically the correlation coefficient for the variable and factor. It shows the variance explained by the variable on that particular factor.

Eigenvaluesare also called characteristics roots. Eigen values shows variance explained by the factors out of the total variance.

Scree plot: The scree plot is the graph of Eigenvalues against all the factors. The graph is useful for determining how many factors to retain

Exploratory Factor Analysis: EFA is used to understand the structure of data and data reduction. Basically, EFA serves the purpose of making data precise to handle by converting questionnaire items into constructs. In the present study EFA is used to identify the constructs for Sources of stress and suggestions to control stress in Central Armed Police Forces (CAPFs).

Reliability: The reliability has been measured for all the constructs and the overall scale with the help of Cronbach's Alpha. The reliability ensures that there was sufficient uni-directionality in the scale adopted.

Multiple Regression: Multiple Regression is also known as MLR (Multiple Linear Regression), is a statistical tool which is used to predict the results of a response variable with the help of several explanatory variables. Multiple regression analysis is usually used to model the linear relation amid independent (explanatory variables) and dependent (response variables).

Kaiser-Meyer–Olkin (KMO) and Bartlett's test: The KMO and Bartlett's test evaluates all available data together. A KMO value over 0.5 and a significant level for the Bartlett's test below 0.05 suggest there is substantial correlation in the data. Variable co-linearity indicates how strongly a single variable is correlated with other variables.If the value is less than 0.5 then the result of the factor analysis probably will not be useful.

ANOVA: Analysis of variance (ANOVA) is a statistical test used to analyse the difference the mean of more than two groups. A one-way ANOVA uses one independent variable while two-way ANOVA uses two independent variables.

DATA PRESENTATION: The data have been presented in tabular form and also using pie diagrams, charts etc.

3.11 LIMITATIONS OF THE STUDY

Even though the researcher tried to cover all possible aspects of stress and its management among CAPF personnel still, several limitations are there in the present study that needs to be identified so that the researchers can get the lead to some good suggestions for study in the time ahead.

1)   The study is generalised to CAPF personnel excluding Assam Rifles because command is with Army.

2)   The demographic variables, constructs related stress, its management, consequences and solutions are limited.

3)   The study had not thrown light on any personal and family issues related to stress in CAPF personnel.

3.12 Conclusion

This chapter has discussed the research methodology which is applied in the present research study, scope of the research study, research objective, research hypotheses, theoretical and conceptual framework, research process, research design, data collection, population central Armed Police Forces, determination of simple size, tools of data collection analysis and various statistical tools used like factor analysis, Reliability test and Multiple Regression Analysis and limitations of the study. A structure questionnaire is used to elicit information from respondents.