METHODOLOGY

In the preceding chapters the concepts and related studies concerning to academic stress, spiritual intelligence, life satisfaction and mental health problems of students have been presented. The present chapter covers the statement of the problem at a glance followed by objectives, hypotheses of research design. It also includes design, methodology and the technical details of the tools used in this study. A brief description of the procedures adopted in completing the research work that includes sample size and its characteristics has also been discussed in this chapter.

The objective of any scientific endeavor is to ascertain facts and analyze them in a systematic and unbiased manner. In behavioural sciences the research design plays significant role in collecting and analyzing data and drawing meaningful inferences. Research means, the systematic method of conducting investigation of a problem, formulation of hypothesis, collecting the data, then analysis and reaching at certain conclusions either in the form of solution or towards the solution of the problem of the research and to add something new to the existing knowledge concerning to the variables studied.

Lindquist (1956) pointed out that “the researches are designed to proceed in a planned manner to control variance and to answer pertinent research questions”. Several methodological approaches and design have been developed and discussed but the choice of appropriate design depends upon the special nature and characteristics of the variables and availability of the sample, nature of measuring instruments and restraints regarding the manipulation/measurement of the variables being studied (Fergusan, 1981). Thus, the choice of method is governed by the aims of the study, the variables under investigation and the nature of the data.

Mohsin (1984) opines that “research design depicts the plan which states the relation observed facts and events on the basis of which conclusion could be drawn”. The main function of an appropriate research design is to maximize the effect of systematic variance, control of extraneous source of variance and minimize error variance (Broota, 1989).

The present study was designed to determine the mental health problems of professional and non-professional courses students as related to academic stress, spiritual intelligence and life satisfaction. In this chapter the research procedure used
to complete this study have been presented. The research design was between group in nature and correlational in nature, in correlational research design researcher observes and measure relationship between variables which occur naturally without any assistance. It does not justify specifically calling one variable as independent variables and others are dependent variable. The multi group comparison will also be done course wise. The present investigation is primarily focusing on the following variables.

**CRITERION VARIABLE (Dependent Variable)**
Mental Health

**PREDICTOR VARIABLE (Independent variable)**
Academic Stress
Spiritual Intelligence
Life satisfaction

**Participants**

In social sciences research the sample size and its selection technique plays an important role. Sampling is a process of selecting a small part from the population of interest assuming that it should process the representing characteristics of the population of which it is a part. The researcher has to plan his/her research work by limiting within its domain in his/her research investigation. The purposive sampling technique was used for collecting information from participants on different measures following inclusion-exclusion criteria as needed for this research work.

**Inclusion Criteria:**

- Students pursuing professional and non-professional courses students.
- Only professional (M.B.B.S., B.Tech and M.B.A.) and non-professional courses (B.A., B.Sc and B.Com) students were included
- Data was collected from the participants of different faculties of study of AMU, Aligarh
- Participants whose age ranges between 17 to 25 years.

**Exclusion Criteria:**

- Students of other University/Colleges were not included in the sample.
- Students pursuing Nursing, B.Ed., B.Lib., B.C.A., M.C.A., M.A., M.Sc., M.com., etc. were not included.
Chapter II

Methodology

- The student repeaters in the same class.
- Participants from other universities such as DU, BHU, JNU, etc.
- Students aged who were more than 25 years and less than 17 years old.

The adequate sample and the method of selecting sample 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 the present research the sample size was \( N=600 \) students (\textit{i.e.} pursuing for the degree of different professional and non professional courses) drawn randomly from different Faculties and Colleges of Aligarh Muslim University, Aligarh. The samples were categorizes into 6 sub-groups of two major categories of students \textit{viz.} professional courses students includes (MBBS, B.Tech and MBA). Similarly non-professionals courses students includes (B.A., B. Sc and B.Com). Both professional and non professional students were categorizes into equal numbers (100) of each group of students. Both male and female students were also included in this research and the age range of the participants were between 18-25 years old (Mean=20.91 and SD=1.931). The sample break up of the participants of this study is as given below.

\[
\begin{align*}
\text{N= 600 STUDENTS} \\
\downarrow \\
\text{Professional Course STUDENTS} \\
\text{N= 300} \\
M.B.B.S. \ n=100 \\
B.Tech. \ n=100 \\
M.B.A. \ n=100 \\
\downarrow \\
\text{Non Professional Courses STUDENTS} \\
\text{N=300} \\
B.A. \ n=100 \\
B.Sc. \ n=100 \\
B.Com. \ n=100
\end{align*}
\]

Tools

Psychological tests play most important role for measurement and understanding of human behaviour of explicit or implicit nature objectively. Due to complementary
and dynamic of behaviour, it is required to carefully select most appropriate measures which could serve the purpose of research. For this present study questionnaires used were convenient and favourable. Following measurers and scales were chosen for this study and their details are as given below.

1. **Academic Stress Scale (ASS)**

   Academic stress scale (ASS) developed by the present researchers *i.e.* Anjum, S. and Khan, M.S. (2012). The researchers to developed the necessity test because of not availability of appropriate questionnaire to be used for this type of research work. The researcher decided to construct this scale to meet out the requirements of the research work. Before the development of academic stress scale researcher searched out the relevant literature pertaining to academic stress and in the light of this definition “academic stress is a mental distress with respect to some apprehended frustration association with academic failure or even an awareness of the possibility of such failure (Gupta and Khan, 1987)”. Keeping in view relevant points in mind 28 statements were prepared from various sources and these statements were given to the professors belonging to psychology, sociology and education departments for their comments regarding the appropriateness of the statements for measuring academic stress on a five point rating scale. After taking comments and suggestions from them then researcher conducted a pilot study on the sample of 240 students of professional (MBBS, B.Tech and MBA) and non-professional courses (B.A., B.Sc and B.Com). After conduct of the pilot study researcher analyzed the 28 statements through factor analysis, the items were loaded on SPSS and with the help Varimax rotation each statement were analyzed. The whole procedure clearly confirms the relevance and the face validity of the scale. But in spite of this fact both reliability and variability were calculated for further confirmation. The reliability of ASS cronbach’s alpha was 0.80 and coefficient of correlation was 0.669 (validity). Having collected the data, scoring of each statement was done and thereafter, scoring sheet was prepared for feeding the scores in computer for final analysis with the help of statistical package for social sciences (SPSS) 16 version package this scale will be used for the present research work.

   Finally academic stress scale contains 21 items and each item was measured on 5 point likert scale *i.e.* Strongly disagree-1, Disagree-2, Neither agree nor disagree-
3, Agree-4 and Strongly agree-5. Hence, the total scores of the scale range from 21-105; higher the scores indicate high academic stress and lower the scores is the indicator or low academic stress. The age ranges of the subjects were 17-25 years old and thereafter it was finally used to gather information from the two groups of participants as per need of the proposed research work.

2. **Life Satisfaction Scale (LSS)**

A ten item scale designed and developed by Warr *et. al.* (1979) was used to measure the satisfaction with salient features of daily life and activities of the respondents, psychometric properties of the scale (test, retest reliability, split half reliability, internal consistency, reliability and validity), were reported by author and others. Responses to be rated on seven point scale from 1, referring to “I am extremely dissatisfied” to 7, referring to “I am extremely satisfied”. The possible range of scores could vary from 10-70. A high score indicates high satisfaction with life and vice versa. The test-retest reliability of the test was 0.87.

3. **Spiritual Intelligence Self Report Inventory (SISRI-24)**

SISRI-24 was developed by David B. King (2008). It contains of 24 items and it was used to measure spiritual intelligence of the participants. It has 4 dimensions namely Critical Existential Thinking (CET) 7 items were included such as 1,3,5,9,13,17,21 and range was 0-28. Personal Meaning Production (PMP) 5 items were included such as 7, 11,15,19,23 and range was 0-20. Transcendental Awareness (TA) 7 items were included such as 2, 6*, 10, 14,18,20,22 and range was 0-28. Conscious State Expansion (CSE) 5 items were included such as 4, 8,12,16,24 and range was 0-20. All 23 items were positive items except one *i.e.* 6 item it was negative one in this inventory. The range was 0-96, higher the scores indicates high spiritual intelligence and vice versa. The reliability and validity of SISRI-24 area as; Cronbach’s Alpha=0.920 (CET=0.78; PMP=0.78; TA=0.87; CSE=0.91). Standardized Alpha =0.922 (CET=0.78; PMP=0.78; TA=0.87; CSE=0.91). Average Item Correlation =0.34 (CET=0.34; PMP=0.42; TA=0.49; CSE=0.69). Split half reliability =0.91. The test-retest reliability of the inventory was 0.89. Multivariate skewness =0.02 and Multivariate kurtosis =0.23.
4. Mental Health Checklist-(MHC)

MHC developed by Pramod Kumar (1992), it is consists of 11 items for somatic health. It measures mental health status of an individual. Responses to be rated on 4 point scale i.e., Rarely means (1), At time means (2), often means (3) and Always means (4). The numerical value was 1,2,3,4 is assigned to the 4 response categories the total scores of a person will vary between 11-44 as per manual, higher the scores indicates poor mental health and lower the scores indicates good mental health. The split half reliability correlated with odd-even items (applying the spearman-Brown formula) as reported was found to be 0.70 with an index of reliability of 0.83, and the test-retest reliability found to be 0.65 with an index reliability of 0.81. The face validity of the MHC appears to be fairly high as items were prepared by asking respondents and the content validity was adequately assumed as only those symptoms which showed 100% agreement amongst the judges regarding their relevance to the study of mental health were selected. Separate percentile norms have been prepared and reported for male and female groups. These are to be interpreted in the conventional manner. If a person gets a score equivalent to P90 or more it will show that he/she is under great mental strain. P90 indicates very poor mental health; P75 indicates poor mental health; P50 indicates average mental health; P25 indicates good mental health and P10 indicates very good mental health. The mental health status of the participants to be measured and interpreted accordingly.

Personal Data Sheet (PDS) / Biographical Information

The PDS includes the relevant information of the respondents under the following major categories i.e. Age, Gender, Course of the study, Religion, Fathers’ qualification, Mothers’ qualification, Family status, Day scholar or Hostler and Rural or urban.

Procedure

Collecting information from the participants in the psychological research is a tedious and more challenging job for a researcher. So as foremost priority should be given how one can gather most authentic and appropriate information from the
participants of focused group on different questionnaire/scales. Therefore the researcher has to be conscious while collecting information from the participants on different questionnaires/inventories/scales. For this study the information has to be collected from the students of two different streams i.e. the students who pursuing professional and non-professional courses. The certificate for granting permission from the head of the Institutions was obtained from the supervisor for collecting data. The researcher approached the Principal of the colleges, chairmen of the departments to obtained their permission/approval to collect data from the students of professional and non-professional courses. The researcher contacted the students in small group of two/three students or individually as per availability and convenience of the respondents. The subjects were assured that the information given by them be kept confidential and used merely for academic purpose. They were requested to carefully read the instructions printed and go through each and every statement of the questionnaire/scale and to respond accordingly. The participants took almost 45-55 minutes in completing all the questionnaires. In this way the information of each questionnaire was obtained and scored for data analysis. Four questionnaires/scales were administered on students of professional and non-professional courses (M.B.B.S., B. Tech., M.B.A., B.A., B.Sc. and B.Com) namely academic stress scale, spiritual intelligence self report inventory, life satisfaction scale and mental health checklist with personal data sheet. The sample size was consisted of 600 students and in each subgroup there were 100 participants. In total 1000 questionnaires were distributed and out of them 280 scales were found in one way or the other incomplete and excluded. The questionnaires of 600 participants were found complete in all respect and retained for data analysis. It took almost 8 months in getting the targeted sample. The difficulties faced during the course of data collection were any how managed by the researcher to the best of the abilities and information were gathered from them on different questionnaires/scales and scored for statistical analyses keeping in view the major objectives of the study.

**Statistical Analyses**

Once the data was collected from the respondents of professional and non-professional courses students, then it was essentially needed to analyze data by means of appropriate statistical techniques to reduce long-wide ranging scores into
intelligible and interpreted from in order to understand the results very easily and conveniently. Statistical analysis provides clear cut picture of obtained results in the form of numerical values. In the light of research objectives and hypotheses of the present research investigation Independent t-test was used to compare the groups of the students of professional and non-professional courses, low and high groups were formed on the basis of Q1 and Q3 cut points to see the impact of low and high academic stress, spiritual intelligence, and life satisfaction on mental health. Further the groups were also compared in terms of gender, religious and family status (joint and nuclear) on all the four above variables. One-way ANOVA was applied to ascertain the influence of different courses of professional and non-professional courses students (M.B.B.S., B. Tech., M.B.A., B.A., B.Sc. and B.Com) on mental health. Multiple regression analysis was done to find out the academic stress, spiritual intelligence and its four dimensions Critical Existential Thinking (CET), Personal Meaning Production (PMP), Transcendental Awareness (TA) and Conscious state expansion (CSE) and life satisfaction as predictors of mental health. Since, there are many methods of Regression analysis as enter, forward, backward, stepwise and remove. Hence, in the present study Regression analysis by adopting stepwise method was found suitable in analyzing the data because one of the advantages of stepwise method is that it produces a most parsimonious model and ensures to end up with a small set of predictor variables which significantly predict the criterion variable, and lastly using product moment correlation coefficient, to determine the relationships of academic stress, spiritual intelligence, and life satisfaction with mental health of professional and non-professional courses students. All statistical analyses were done by (SPSS) version 16. The obtained results are presented systematically in different tables in the next chapter.