CHAPTER III
PLAN AND PROCEDURE

3.1. INTRODUCTION

This chapter describes and illustrates the methodology and research design utilized in current study according to objectives mentioned in chapter one. Research is a process of gaining a better understanding of the complexities of human experience, the goal of research is to describe and understand a field, practice or activity (Brown & Dowling, 1998). This research is interested in discovering whether existence of significant probable influences of component and time amount of video and computer games consuming on abnormal behavior adolescents users. Specifically, a total of 1140 respondents from 8 schools within Pune and Tehran were randomly selected to make up the sample. In this study both qualitative and quantitative methodologies have been used to diagnose and examine the effect of video and computer games on behavior of male adolescent consumer. Selected participants answered a survey standard questionnaire structure in Likert format (SCL-90-R) pathological behaviour symptom checklist as well as a questionnaire for obtain demographic data related to gaming habit and favourite games according to participants’ reports. Data gathered from this research instruments were then computed for interpretation. Along with primary data, the researcher also made use of secondary resources in the form of related published articles and literatures to support the survey results. The reliability of results and conclusions extensively depend on the quality of the research design, data collection, data management, and data analysis. This chapter will be dedicated to the description of the methods and policy done in order to obtain the data, how they will be analysed, interpreted, and how the conclusion will be met. All these will help in the processing of the data and the devising of conclusions. Therefore this chapter organized as is explained in following purposes:

- Describe the research methodology and research design of this study
- Explain the sample selection
- Describe the procedure and policy used in designing the instrument and collecting the data
• Provide an explanation of the statistical procedures used to analyze the data
• Ethical consideration.

In this research, descriptive method of research has used to gather information about the present existing condition. The primary purpose of employing this method is to provide an accurate description or picture of the status or characteristics of situation or phenomenon (Johnson, 2011). It is concerned with conditions or relationships that exist (Best, 2001) to answering the research questions through the analysis of variable relationships between non manipulated variables and the development of generalizations, extending its conclusions beyond the sample observed (Best & Kahn, 2001).

Researcher opted to use this kind of research method, by considering the desire of the researcher to obtain first hand data from the respondents in a manner that formulate rational and sound conclusions and recommendations for the study.

3.2 RESEARCH DESIGN

Research has been defined in a number of different ways. Kerlinger's (1973) states scientific research as a "systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomenon, Research is a systematic and objective analysis and recording of controlled observations that may lead to the development of generalization, principles or theories, resulting in prediction and possibly ultimate control of events (Best & Kahn, 2006). Research methodology is defined as the total strategy, from the identification of problem, to the final plans for gathering data and analysis (Burns & Grove, 2001). Research design is a detailed plan how the goals of research will be achieved. The research process proceeds in six phases as follow, specifying the problem topic to be studied, framing research design, planning a sample, collecting the data, analyzing the data, preparing the report (Ahuja, 2001). Sekaran (1992) emphasizes six factors for research design:

1) Type of investigation: Causal versus non-causal
2) Purpose of the study: exploratory, descriptive, hypothesis testing
3) Extent of researcher interference with the study
4) Study setting: contrived versus non-contrived
5) Unit of analysis: Individual, dyads, groups, organizations, cultures
6) Time horizon of study: cross-sectional versus longitudinal.

According to Allison (2000) a research design includes the planning of the research procedure as well as the procedure for data collection and analysis. Creswell (2008) point out following major actions for research procedures:

- Identification of research problem
- Literature review
- Specifying the purpose of research
- Determine specific research questions or hypotheses
- Data collection
- Analyzing and interpreting the data
- Reporting and evaluating research.

One of the branch of social research is Educational research, the formal, systematic application of the scientific method to the study of educational problems. The goal of educational research is essentially the same as the goal of all science: to describe, explain, predict, or control phenomena – in this case educational phenomena, which have similarity with other scientific research method in following steps: Selection and definition of a problem, Execution of research procedures, Analysis of data and Drawing and stating conclusions (Gay & Mills, 2009). According to Best and Kahn (1986) practically all studies fall under one or combination, of these types: historical research, descriptive research (qualitative or quantitative) and experimental research. The descriptive research divided in two main types as coming in follow:

A. Descriptive research quantitative: uses quantitative methods to describe what is, recording, analyzing, and interpreting conditions exist. It involves some type of comparison or contrast and attempts to discover relationships between existing non-manipulated variables (Best & Kahn, 2001). Some form of statistical analysis is used to describe the result of the study quantitative research is the collection and analysis of numerical data to describe, explain, predict, or control phenomena of interest (Gay & Mills, 2009). It is defined as a formal, objective, systematic process to describe and
test relationship and examine cause and effect interactions among variables (Burns & Grove, 2001).

B. *Qualitative descriptive research*: uses non quantitative methods to describe what is by using systematic procedure to discover non quantifiable relationships between existing variables (Best & Kahn, 2001) second approach of descriptive research which collect, analysis and interpretation of comprehensive narrative and visual (i.e., numerical ) data to gain insight into a particular phenomenon of interest (Gay & Mills, 2009).

The method of descriptive research is particularly appropriate in the behavioral sciences because many of the type of behavior that interest the researcher cannot be arranged in realistic setting. Introducing significant variables may be harmful or threatening for to human subjects (Best, 2001). The major goal of a descriptive research is to describe event, phenomena and situations. Since description is made on the basis of scientific observation, and it is expected to be more accurate and precise than casual. According to Backstorm and Hursh (1963) survey research or field research is a method to “gathering information about a large number of people by interviewing a few of them” as well as Survey method defined as a systematic and comprehensive study of a particular community, organization, groups, etc., with a view to the analysis of a social problem and presentation of recommendations for its solutions (Ahuja, 2001) it is an instrument to collect data that describes one or more characteristics of specific population (Gay & Mills, 2009) which collect original data for describing a population too large to observe directly (Mouton, 1996) and obtain information from a sample of people by means of self-report, that is, the people respond to series of questions posed by the investigator (Polit & Hungler, 1992).

*Questionnaire* is a self-report data collection instrument that each research participant fill out as part of a research study. Researcher use questionnaire to obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality and behavioral intentions of research participants (Johnson & Christensen, 2011) It defines as a written collection of survey questions to be answered by a selected group of research participants to determines and reports the way things are, it involves collecting numerical data to test hypothesis or answer questions about current status of the subject of the study (Gay &
The advantages of utilizing survey has mentioned by Ahuja (2001): Low cost, particularly when the information is collected through questionnaire from respondents scattered in large areas. Generalization is more legitimate because of adequate number of persons surveyed. Flexibility in data collection is possible. Tools and could be questionnaire, schedule, interview or observation. Surveys enable researcher to get facts which he never anticipated (Ahuja, 2001).

This research in other hand categorized as a Causal –comparative research, which attempts to determine the cause, or reason, for existing differences in the behavior or status of groups of individuals. The cause is a behavior or characteristic believed to influence some other behavior or characteristic, and is known as the grouping variable. The change or difference in a behavior or characteristic that occurs as a result – that is the effect – is known as a dependent variable. The basic causal-comparative design involves selecting two groups differing on some variable of interest and comparing them on some dependent variable. One group may possess a characteristic that the other does not, or one group possess more of a characteristic that the other (Gay & Mills, 2009). In casual and comparative research, the researcher studies the relationship between one or more categorical independent variables and one or more quantitative dependent variables. In the most basic case, there are a single categorical independent variable and single quantitative dependent variable. Because the independent variable is categorical (e.g., males vs. females, parents vs. nonparents), the different groups average scores on a dependent variable are compared to determine whether a relationship is present between the independent and independent variables. (Johnson & Christensen, 2011). For these reasons, the researcher chose a descriptive research methodology by considering the objectives to obtain first hand data from the respondents. The descriptive method is advantageous for the researcher due to its flexibility; this method is then appropriate as can allow the identification of the similarities and differences and compare the respondents’ answers. This study used both qualitative and quantitative data to giving the researcher greater options in selecting the instrument for data-gathering (Intra method mixing), both quantitative and qualitative data are obtained through the creative use of a single method. For example a mixed questionnaire. It includes both open-ended part provides qualitative data, and closed –ended part provides quantitative data. (Johnson
For this research, two types of data were gathered. These included the primary and secondary data types. The primary data were derived from the answers the participants gave during the survey process. By applying first a questionnaire survey instrument (SCL-90-R) to assess the level of (pathological) abnormal behavior of participants due to use computer and video games and second research made questionnaire to find out demographic information of the participants regarding their favorite games choices to evaluate the ranking age and component of those games according to Entertainment Software Rating Board (ESRB). The secondary data on the other hand, were obtained from published documents and literatures that were relevant to video and computer games and behaviour problems.

Due to accomplishment of current research purpose descriptive design data collection, called matched stage have used by collecting data in two situations and two periods. The data have collected from one situation (Pune) at one time and from another situation (Tehran) at another time. A survey was administered to a selected sample from a specific population identified by the Pune and Tehran high schools. Diagrammatically, it can illustrate as bellow:

![Diagram of data collection method]

**Figure 3.1. Matched stage**

With the use of the survey questionnaire and published literatures, this study took on the combined quantitative and qualitative approach of research. By means of employing this combined approach, the researcher was able to obtain the advantages of both quantitative and qualitative approaches and overcome their limitations.
<table>
<thead>
<tr>
<th>Objective number</th>
<th>Hypothesis number</th>
<th>Method of research</th>
<th>Population</th>
<th>Sampling technique</th>
<th>Sample size</th>
<th>Tool and technique for data collection</th>
<th>Tool for data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Descriptive (survey) Qualitative and quantitative</td>
<td>Coeducational and boys high schools of Pune &amp; Tehran boys high schools</td>
<td>Simple random sampling</td>
<td>200 Indian students &amp; 200 Iranian students</td>
<td>Primary data: Researcher made questionnaire &amp; secondary data (literature: conceptual &amp; research)</td>
<td>Descriptive (Mean &amp; SCL-90-R profile) &amp; Inferential (t.test)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Descriptive (survey) Qualitative and quantitative</td>
<td>Coeducational boys high schools of Pune</td>
<td>Simple random sampling</td>
<td>570 Indian students</td>
<td>Primary data: SCL-90 –R Test &amp; secondary data (literature: conceptual &amp; research)</td>
<td>Descriptive (Mean &amp; SCL-90-R profile) &amp; Inferential (t.test)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Descriptive (survey) Qualitative and quantitative</td>
<td>Boys high schools of Tehran</td>
<td>Simple random sampling</td>
<td>570 Iranian students</td>
<td>Primary data: SCL-90 –R Test &amp; secondary data (literature: conceptual &amp; research)</td>
<td>Descriptive (Mean &amp; SCL-90-R profile) &amp; Inferential (t.test)</td>
</tr>
<tr>
<td></td>
<td>4, 5, &amp; 6</td>
<td>Descriptive (survey) Qualitative and quantitative</td>
<td>Coeducational and boys high schools of Pune and boys high schools of Tehran</td>
<td>Simple random sampling</td>
<td>570 Indian students &amp; 570 Iranian students</td>
<td>Primary data: SCL-90 –R Test &amp; secondary data (literature: conceptual &amp; research)</td>
<td>Descriptive (Mean &amp; SCL-90-R profile) &amp; Inferential: multivariate analysis of variance (MANOVA)</td>
</tr>
</tbody>
</table>
3.3. SOURCE OF THE DATA

The source of this study is Iranian boys’ student from Tehran (Iran) high schools and Indian boys ‘student of Pune (India)’ medium English schools. Data for the study was collected from June 2010 to May 2011.

3.4. SAMPLING DESIGN AND SAMPLE

According to Gorard (2003) the group you wish to study in termed the ‘population’, and the group you actually involve in your research is the sample, the purpose of sampling is to use relatively small number of cases to find out about a much larger population. Population refers to all those people with the characteristics which the researcher wants to study within the context of particular research problem (Shepard, 2005).

An easy way of determining sample size is by means of table which is prepared on different values of p, E, and Z, where p is population estimate size, E is error, and Z is confidence level. In this research sample size have determined through Eckhardt table under possible combination of p, E and Z values. confidence level 97 % , E ,± 3 percent ,p : + 10,000  ;1111 ,(Ahuja , 2001) .for confidence level of decision it have decided as 1140, 570 Indian students and 570 Iranian students.

Multistage sampling technique was used for current study. At first stage, simple random sampling was done for accomplishment sample size aforementioned. This sampling method is conducted where each member of a population has an equal opportunity to become part of the sample. As all members of the population have an equal chance of becoming a research participant, this is said to be the most efficient sampling procedure. In order to conduct this sampling strategy, the researcher defined the population first, listed down all the members of the population and then selected members to make the sample. For this procedure, the lottery sampling or the fish bowl technique was employed. This method involves the selection of the sample at random from the sampling frame through the use of random number tables (Saunders, Lewis & Thornhill, 2003). At the second stage 200 ( Iranian and Indian M-rating VCG gamer
and 200 (Iranian and Indian under M-rating VCG gamer), total 400 have recruit via stratified random sample from 1140 participant earlier have engaged in study, which fulfilment sample size to evaluating mean difference of behaviour problem among participant due to content of VCG. The stratified random sampling is advisable to subdivide the population into smaller homogeneous groups to get more accurate representation (Best & Kahn, 2001). The reason was according demographic data have obtain through participants report almost all of participant mentioned one of VCG with the M-rating content as the favourite game, for comparing two group the M-rating gamers referred to participants who mentioned 2 or more M-rating VCG as a favourite games. There for investigator had to deduct the sample size to realizing pre assumption of same sample size in two groups to acquire reliable result.

Table 3.2
Sampling Size Distribution

<table>
<thead>
<tr>
<th>SR NO</th>
<th>Name of school</th>
<th>Number of student</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Modern High School (Eng.Med.)&amp;Ncl Junior College</td>
<td>143</td>
<td>Indian</td>
</tr>
<tr>
<td>2</td>
<td>Sholar High School</td>
<td>76</td>
<td>Indian</td>
</tr>
<tr>
<td>3</td>
<td>Loyola</td>
<td>166</td>
<td>Indian</td>
</tr>
<tr>
<td>4</td>
<td>Spicer High School</td>
<td>185</td>
<td>Indian</td>
</tr>
<tr>
<td>5</td>
<td>Movahed</td>
<td>126</td>
<td>Iranian</td>
</tr>
<tr>
<td>6</td>
<td>Khayam</td>
<td>148</td>
<td>Iranian</td>
</tr>
<tr>
<td>7</td>
<td>Farabi</td>
<td>155</td>
<td>Iranian</td>
</tr>
<tr>
<td>8</td>
<td>Bagherololum</td>
<td>141</td>
<td>Iranian</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>1140</td>
<td></td>
</tr>
</tbody>
</table>
Table 3.3

Variables of study

<table>
<thead>
<tr>
<th>NO</th>
<th>Variables that were measured during this study</th>
<th>Tools for measuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Amount of time spending for video and computer games weekly</td>
<td>Self report by questionnaire</td>
</tr>
<tr>
<td>2</td>
<td>Age rate of video and computer game</td>
<td>Favorite game Self report</td>
</tr>
<tr>
<td>3</td>
<td>Content of video and computer game</td>
<td>Favorite game self report</td>
</tr>
<tr>
<td>4</td>
<td>Level of somatization disorder</td>
<td>SCL-90-R item numbers (1,4,12,27,40,42,48,49,52,53,56,58)</td>
</tr>
<tr>
<td>5</td>
<td>Level of obsessive-compulsive</td>
<td>SCL-90-R item numbers (3,9,10,28,38,45,46,51,55,65)</td>
</tr>
<tr>
<td>6</td>
<td>Level of interpersonal sensitivity</td>
<td>SCL-90-R item number(6,21,34,36,37,41,61,69,73)</td>
</tr>
<tr>
<td>7</td>
<td>Level of depression</td>
<td>SCL-90-R item numbers(5,14,15,20,22,26,29,30,31,32,54,71,79)</td>
</tr>
<tr>
<td>8</td>
<td>Level of anxiety</td>
<td>Scl-90-r</td>
</tr>
<tr>
<td></td>
<td>Item numbers (2.17,23,33,39,57,72,78,80,86)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Level of hostility</td>
<td>Scl-90-r</td>
</tr>
<tr>
<td></td>
<td>Item numbers (11,24,63,67,74,81)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Level of phobic anxiety</td>
<td>Scl-90-r</td>
</tr>
<tr>
<td></td>
<td>Item numbers (13,25,47,50,70,75,82)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Level of paranoid ideation</td>
<td>Scl-90-r</td>
</tr>
<tr>
<td></td>
<td>Item numbers (18,18,43,67,76,83)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Level of psychoticism</td>
<td>Scl-90-r</td>
</tr>
<tr>
<td></td>
<td>Item numbers (7,16,35,62,77,84,85,87,88,90)</td>
<td></td>
</tr>
</tbody>
</table>
3.5. TOOLS AND TECHNIQUES OF DATA COLLECTION

3.5.1. TOOLS OF THE STUDY

The SCL-90-R is a 90-item self-report symptom inventory designed to reflect the psychological symptom patterns of community, medical, and psychiatric respondents (the SCL-90-R items are listed in table 13). Each item is rated on five-point scale of distress (0-4) ranging from “not at all” to “extremely”. The SCL-90-R is scored and interpreted in terms of nine primary symptom dimensions and there global indices of distress. The primary symptom dimensions and global indices are labeled as follows:

- Somatization (SOM)
- Obsessive–Compulsive (O-C)
- Interpersonal Sensitivity (I-S)
- Depression (DEP)
- Anxiety (ANX)
- Hostility (HOS)
- Phobic Anxiety (PHOB)
- Paranoid Ideation (PAR)
- Psychoticism (PSY)

Figure 3.2. Scle-90-r symptom dimension, Source: Derogatis, 1994

Test Characteristics

The SCL-90-R is a measure of current, point-in-time, psychological symptom status. It is not a measure of personality, except indirectly in that certain personality types and DSM (American Psychiatric Association). A sixth-grade reading level is required for taking SCL-90-R.
Administration Instructions

Introductions to the SCL-90-R and the minimal amount of instruction are required to assure measurement validity. In any assessment context, the test administrator’s attitude concerning the value of the assessment will markedly affect the quality of the respondent’s answers. The SCL-90-R can be administrated in one of two formats: paper-and-pencil or online. The instructions presented to the client are similar for both formats. The instructions for the paper-and-pencil form are as follows: Below is a list of problems people sometimes have, please read each one carefully, and blacken the circle that best describes. How much that problem has distressed or bothered you during the past 7 days including today. Blacken the circle for only one number for each problem and do not skip any items. If change your mind, erase your first mark carefully. Number refers to the following descriptor phrases:

0 = Not At All
1 = A Little Bit
2 = Moderately
3 = Quite A Bit
4 = Extremely

Figure 3.3.scl-90-r descriptive phrase

Administration Time

Under normal circumstances, the SCL-90-R requires between 12 and 15 minutes to complete.

Appropriate Samples and Uses

The SCL-90-R is designed to reflect the psychological symptom status of psychological patients, medical patients, and individuals in the community who are not currently patients. It can also use with adolescents (as young as 13) provided technician is
available to interpret difficult items. Separate norms for adolescent non-patients have been developed for the SCL-90-R (Derogatis, 1994).

### 3.5.2. ADMINISTRATION DESIGN

The symptoms of the SCL-90-R were selected on the basis of the clear and consistent definition in the literature so that confusion about what was being measured could be averted. Each item was used rated on a five point Likert scale of distress (0-4) ranging from “not at all”, a little bit, moderately, quite a bit and extremely. Each participant had to choose the response that best describes how much that problem has distressed or bothered him during the past 7 days including today.

- **To assess the level of Somatization distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 12 items (i.e. 1, 4, 12, 27, 40, 42, 48, 49, 52, 53, 56, 58), related somatization dimension which reflected distress arising from perceptions of bodily dysfunction. Complaints focus on cardiovascular, gastrointestinal, respiratory, and other systems with strong autonomic mediation. Paranoid discomfort of the gross musculature and additional somatic equivalents of anxiety are also components of somatization dimension (Derogatis, 1994).

- **To assess the level of Obsessive-Compulsive distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 10 items (i.e. 3, 9, 10, 28, 38, 45, 46, 51, 55, 65), related obsessive-compulsive dimension, which often identified with the standard clinical syndrome of the same name. This measure focuses on thoughts, impulses, and actions that are experienced as unremitting and irresistible and that are of an ego-alien or unwanted nature. Behavior and experiences of a more general cognitive performance deficit are also included in this measure (Derogatis, 1994).

- **To assess the level of Interpersonal Sensitivity distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 9 items (i.e. 6, 21, 34, 36, 37, 41, 61, 69, and 73), by concentrating on
feelings of inadequacy and inferiority, particularly in comparison with other people. Self-deprecation, self-doubt, and marked discomfort during interpersonal interactions are characteristic manifestation of this syndrome (Derogatis, 1994).

- **To assess the level of Depression distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 13 items (i.e. 5, 14, 15, 20, 22, 26, 29, 30, 31, 32, 54, 71 and 79), related depression dimension, which reflects a representative range of the manifestations of clerical depression. Symptoms of dysphoric mood and affect are represented as are signs of withdrawal of life interest, lack of motivation, and loss of vital energy. In addition, feelings of hopelessness, thoughts of suicide, and other cognitive and somatic correlates of depression are included (Derogatis, 1994).

- **To assess the level of Anxiety distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 10 items (i.e. 2, 17, 23, 33, 39, 57, 72, 78, 80, 86) with focusing on general signs of anxiety such as nervousness, tension, and trembling as well as panic attacks and feelings of terror, apprehension, and dread. Some somatic correlates of anxiety (Derogatis, 1994).

- **To assess the level of Hostility distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 6 items (i.e. 11, 24, 63, 67, 74, and 81) which reflect thoughts, feelings, or actions that are characteristic of the negative affect state of anger. The selection of items includes all three modes of expression and reflects qualities such as aggression, irritability, rage, and resentment (Derogatis, 1994).

- **To assess the level of phobic anxiety distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 7 items (i.e. 13, 25, 47, 50, 70, 75 and 82) which defined as a persistent fear response to a specific person, place, object or situation—that is irrational and disproportionate to the stimulus and leads to avoidance or escape behavior. Phobic
Anxiety is very similar in definition to “agoraphobia” (Marks, 1969), also called "phobic anxiety-depersonalization syndrome" by Roth (1959) (as cited in Derogatis, 1994).

- **To assess the level of Paranoid Ideation distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 6 items (i.e. 18, 18, 43, 67, 76, and 83) which represents paranoid behavior fundamentally as a disordered mode of thinking. The cardinal characteristics of projective thought, hostility, suspiciousness, grandiosity, centrality, fear of loss of autonomy, and delusions are viewed as primary reflections of this disorder (Derogatis, 1994).

- **To assess the level of psychoticism distress.**

  SCL-90-R questionnaire with checklist were administrated to Indian and Iranian participants. Overall 10 items (i.e. 7, 16, 35, 62, 77, 84, 85, 87, 88, and 90) which indicative of a withdrawn, isolated, schizoid lifestyle were included as were first-rank symptom of schizophrenia such as hallucination and thought control (Derogatis, 1994).

- **To find out demographic information about video and computer games according participants perspective via Demographic Proforma:** Researcher made opinionnaire were administrated to obtain participant views about favorite games, time amount spending by VCG, preferring playing alone or in companionship with other gamers, playing at home or in parlor (game net).

### 3.5.3. RELIABILITY OF THIS SCALE

Cronbach's α (alpha) is a coefficient of reliability (Cronbach, 1951). It is commonly used as a measure of the internal consistency or reliability of a psychometric test score for a sample of examinees. Cronbach's α is defined as

\[
\alpha = \frac{K}{K-1} \left( 1 - \frac{\sum_{i=1}^{K} \sigma_i^2}{\sigma_X^2} \right)
\]

Where \( K \) is the number of components (K-items or testlets), \( \sigma_X^2 \) the variance of the observed total test scores, and \( \sigma_i^2 \) the variance of component \( i \) for the current sample of persons (as cited in Develles, 1991).
Internal consistency coefficients for the nine symptom dimensions were developed from two sources: the data from 209 "symptomatic volunteers" (Derogatis, Rickels, & Rock, 1976) and 103 psychiatric outpatients studied by Horowitz, Rosenberg, Baer, Ureno, and Villasenor (1988). Both investigative groups used the coefficient alpha, which is a multipoint variation of the Kuder-Richardson formula 20. This approach to reliability treats the within-form correlations between items as analogous to the correlations between items from alternate forms, with the assumption that the average correlation between existing items is a good estimate of the average correlation between items in a hypothetical alternate form (Nunally, 1970). Coefficients from both studies were quite satisfactory, ranging from a low of .77 for Psychoticism to a high of .90 for Depression in the Derogatis, Rickels, and Rock (1976) study, and from a low of .79 for Paranoid Ideation to a high of .90 for Depression in the Horowitz et al. (1988) (as cited in Drogatis, 1994, p.34). In the present study, the alpha coefficient of internal consistency reliability was .89 in Indian Sample (N=570), and was .87 in Iranian Sample (N=570).

3.6. PROCEDURE

Data collection had conducted in classroom and participants were told that this was a research to compare Iranian and Indian students on certain aspects of some problems that may they have faced to sometimes. Their cooperation was solicited and confidentiality was assured that their responses were to be used for research purposes only. Procedures have done between June 2010 to May 2011. The classroom teachers were trained to cooperating for conducting survey. The questionnaire were administrated in conformity with the instructions set in the manual. The test were administrated to all participants under the direct supervision of the researcher. First of all Demographic proforma was administered. Instruction questionnaire was paper and pencil format which gathered descriptive demographic data about respondent’s age, favorite video and computer games, time spending for playing these games per week, preference of playing alone or with friends in home or game parlor (game net). Secondly Each participant completed an survey pathological questionnaire (The SCL-90-R test) a 90-item self-report symptom inventory designed to reflect the psychological symptom patterns included Somatization(SOM), obsessive–compulsive (O-C), interpersonal sensitivity (I-
S), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), Psychoticism (PSY) of community, medical, and psychiatric problems. Each item is rated on a five-point scale of distress (0-4) ranging from “not at all” to “extremely.” The test has been administered in paper and pencil format. The Indian sample completed the questionnaires optional in the English, Marathi, and Hindi version. The Iranian sample completed the questionnaires in the Persian version.

Figure 3.4. Procedure of the study

1. Finalization of the problem of the study, hypothesis & Research design
2. Nature of the problem
   - Selection of the Method
3. Select schools for survey in Pune and Tehran
4. Selection of population
5. Selection of the tools
   - Selection of the sample
6. Administration of the Questionnaires
7. Collecting of the Data in Pune and Tehran
8. Analysis of the Data
9. Proving / Rejecting the Hypothesis
10. Conclusion and suggestions
3.7. ETHICAL CONSIDERATIONS

Ethical considerations play a role in all research studies, Gay and Mills (2009), and all researchers must be aware of and attend to ethical considerations in their research. The two overriding rules of ethics are that participants should not be harmed in any way physically, mentally, or socially—and that researchers must obtain the participants informed consent.

According to the American Educational Research Association (revised 2000) it is important that to consider Guiding Standards: Research Populations, Educational Institutions, and the Public designed to protect your subjects in research as follow: A. Preamble. Educational researchers conduct research within a broad array of settings and institutions, including schools, colleges, universities, hospitals, and prisons. It is of paramount importance that educational researchers respect the rights, privacy, dignity, and sensitivities of their research populations and also the integrity of the institutions within which the research occurs. Educational researchers should be especially careful in working with children and other vulnerable populations. These standards are intended to reinforce and strengthen already existing standards enforced by Institutional Review Boards and other professional associations. Standards intended to protect the rights of human subjects should not be interpreted to prohibit teacher research, action research, and/or other forms of practitioner inquiry so long as: the data are those that could be derived from normal teaching/learning processes; confidentiality is maintained; the safety and welfare of participants are protected; informed consent is obtained when appropriate; and the use of the information obtained is primarily intended for the benefit of those receiving instruction in that setting (as cited in Samaras, 2011). As this study utilized human participants and investigated on behavioural problems, certain issues were addressed. The consideration of these issues is necessary for the purpose of ensuring the privacy as well as the security of the participants. These issues were identified in advance so as prevent future problems that could have risen during the research process. Among the significant issues that were considered included consent, confidentiality and data protection. For conducting the survey it was commanding for the researcher to get permission from the ministry of education and extension of Iran and principals of Pune
schools who provide access to the participants for study. In order to secure the consent of the selected participants, the researcher relayed all important details of the study, including its aim and purpose. By explaining these important details, the respondents were able to understand the importance of their role in the completion of the research. The respondents were also advised that they could withdraw from the study even during the process. With this, the participants were not forced to participate in the research. The confidentiality of the participants was also ensured by not disclosing their names or personal information in the research. Only relevant details that helped in answering the research questions were included.

3.8. STATISTICAL TOOLS

After gathering all the completed questionnaires from the respondents, total responses for each dimension were obtained and tabulated. The descriptive statistics most commonly used in causal-comparative studies are the mean, which indicates the average performance of a group on a measure of some variable and the standard deviation, which indicates how spread out a set of scores is that is, whether the scores are relatively close together and clustered account the mean or widely speared out around the mean. According to Eckhardt and Ermann (1997), as a qualitative technique, content analysis is directed towards more subjective information such as attitudes, motives and values, while the quantitative method, it is employed when determining the time frequency or duration of event (as cited in Ahuja, 2001).

The inferential statistics most commonly used in causal –comparative studies are the t test which is used to determine whether the scores of two groups are significantly different from one another, analysis of variance, used to test for significant differences among the scores for three or more groups (Gay and Mills, 2009).

The quantitative Data involving closed-ended questions was analyzed using the Statistical Package for Social Sciences (SPSS). Responses were analyzed using the 5-point Likert scale. The t-test method was used to determine any differences that existed between boys higher and lesser than mean user of video and computer games. Furthermore, an estimation of the standard error of the difference between the two
national’s samples was tested by using Levene’s method of two-way analysis of variance on absolute deviation of scores. The significance or probability value was set at less than or equal to 0.05.

To test the various hypotheses according to objectives following statistical tools were employed in the present study:

Frequency & percentage: To analyzing Demographic data

Mean:

\( t \text{-test} \):

It involves computation of the ratio between experimental variance (observed difference between two sample means) and error variance as follows (Best, 2006):

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}
\]

Where

\( \bar{X}_1 - \bar{X}_2 \) = mean of higher than mean time user and lesser than mean time user

\( S_1, S_2 \) = Sample variance for higher and lesser groups, and

\( N_1, N_2 \) = Sample size for higher and lesser than mean groups

MANOVA:

The Pillai-Bartlett trace is the sum of explained variances on the discriminant variates, which are the variables computed based on the canonical coefficients for a given root.

\[
\text{Pillai trace} = \sum \frac{\lambda_i}{1 + \lambda_i}
\]

Where \( \lambda_i \) are the nonzero eigenvalues of the matrix \( s_{\text{error}}^{-1}s_{\text{effects}} \) (Marcoulides, 1997).

The procedure of analyzing data and result have discussed in next chapter.