CHAPTER 3

METHODOLOGY

The literature review of the present study indicated that the use of internet has a large impact on the social and psychological wellbeing among college students.

The methodology adopted for the present study was designed and is presented as follows,

3.1 Aim of the study
3.2 Objectives of the study
3.3 Operational definition
3.4 Hypotheses of the study
3.5 Research design
3.6 Sampling procedure
3.7 Tools used for the study
3.8 Pilot study
3.9 Reliability and Validity of the tools
3.10 Conduction of the study
3.11 Processing and Analysis of data

3.1 **AIM OF THE STUDY**

To determine the effect of psychosocial intervention on Internet usage and its related factors among college students in Chennai city.

3.2 **OBJECTIVES OF THE STUDY**

The objectives of the present study were,

1. To assess the internet usage and dependency among college students with respect to the frequency of usage.
2. To identify the influence of socio-economic factors on internet use among the college students.

3. To examine the effect of internet use on the general well being and loneliness among college students.

4. To study the influence of internet use on the social factors namely social interaction and communication skills.

5. To identify high internet users with symptoms of loneliness and poor social communication among college students.

6. To design a psycho-social intervention to reduce loneliness and improve social communication among high internet users.

7. To study the effect of psycho-social intervention on internet usage and dependency among the college students.

8. To study the effect of psycho-social intervention on the well being, loneliness, social interaction and communication among the college students.

3.3 OPERATIONAL DEFINITION

- **Internet dependency** - Internet dependence is a term for excessive use of the Internet to the detriment of one’s physical, psychological, social, or vocational well-being (Fortson et al., 2007).

- **Internet usage** - The use of computer to connect to the internet and the amount of time spent on the internet

- **Level Of Internet Usage** – Level of internet usage is defined as the degree of internet usage based on the hours of usage of internet for various purposes. It is categorized as low, moderate and high usage based on the frequency of internet usage.

- **Internet Addiction** - Internet Addiction is defined as an excessive use of internet that causes psychological, social or physical problem for the user. Internet addiction is characterized by excessive or poorly controlled
preoccupations, urges or behaviours regarding computer use and internet access that lead to impairment or distress (Shaw & Black, 2008).

**Psychological Well-being** – It is the ability to manage one’s life, being open to new experiences, having satisfying high quality relationships, a positive attitude towards oneself and one’s past life and the flexibility to deal with life’s inevitable challenges.

- **Social communication** – It is a face to face vocal interaction between individuals involving a feeling of intimacy.

- **Social Interaction**- Social interaction is the social perception towards the family and the other social members in relation to the internet use Social interactions are the acts, actions, or practices of two or more people mutually oriented towards each other's selves, that is, any behavior that tries to affect or take account of each other's subjective experiences or intentions (Rummel, 1976).

- **Loneliness**- It is a state of feeling alone, isolated in this world, or even feeling empty.

### 3.4 HYPOTHESES OF THE STUDY

Based on the objectives of the study, the hypotheses were formulated in the directional manner in order to analyze the influence of internet usage on the social and psychological well being of college students and the effect of intervention on the internet use and internet dependency.

**H1.** There will be a significant difference in the internet usage and dependency among the selected college students based on the

a. Gender
b. Three levels of internet use
c. Type of college
d. Family’s monthly income
H2. There will be a significant difference in the social interaction among
the selected college students based on the

a. Gender
b. Three levels of internet use
c. Type of college
d. Family’s monthly income

H3. There will be a significant difference in the well-being among the
selected college students based on the

a. Gender
b. Three levels of internet use
c. Type of college
d. Family’s monthly income

H4. There will be a significant difference in the loneliness among the
selected college students based on the

a. Gender
b. Three levels of internet use
c. Type of college
d. Family’s monthly income

H5. There will be a significant difference in the communication among the
selected college students based on the

a. Gender
b. Three levels of internet use
c. Type of college
d. Family’s monthly income

H6. Internet usage and dependency will have a significant relationship with
wellbeing, social interaction, loneliness and communication.
H7. A. There will be significant predictors to loneliness among the selected college students.

B. There will be significant predictors to internet usage and loneliness among the selected college students.

H8. Significant difference will exist in the internet usage and dependency between the experimental and control group

(a) Pre-test
(b) Post-test
(c) Follow-up

H9. Significant difference will exist in the Social interaction between the experimental and control group

(a) Pre-test
(b) Post-test
(c) Follow-up

H10. Significant difference will exist in the well being between the experimental and control group

(a) Pre-test
(b) Post-test
(c) Follow-up

H11. Significant difference will exist in the loneliness between the experimental and control group

(a) Pre-test
(b) Post-test
(c) Follow-up
H12. Significant difference will exist in the communication between the experimental and control group

(a) Pre-test
(b) Post-test
(c) Follow-up

H13. There will be a significant difference after the psycho-social intervention among the experimental group of the selected college students on the

a. Internet usage
b. Internet dependency
c. Social interaction
d. Well being
e. Loneliness
f. Communication

H14. There will be a significant difference after the psycho-social intervention among the control group of the selected college students on the

a. Internet usage
b. Internet dependency
c. Social interaction
d. Well being
e. Loneliness
f. Communication
3.5 RESEARCH DESIGN

The present study was carried out in two phases- Phase 1 and Phase 2.

Phase 1

Phase 1 of the present study analyzed the impact of internet usage of college students and also established the relationship of internet use on the social and psychological wellbeing of college students.

The research design followed for this phase of the present study was ex-post facto and primarily descriptive in nature (Kerlinger, 2001). A questionnaire survey was carried out among college students to explore the high internet users, internet usage and dependency, social interaction, well being, loneliness and communication. A quantitative analysis was carried out to identify the high level internet users among college students.

Phase 2

Experimental research design formed the second phase of analysis. Based on the results produced by the quantitative analysis, the high internet users were identified. Pretest–posttest experimental research design with control group was adopted along with the intervention program for high internet users. The investigator identified the high internet users among college students and they were invited for the intervention program. A follow up study was carried out after two months of the intervention study.

3.6 SAMPLING PROCEDURE

The internet has certainly made it easier than ever for students to conduct research, access online course content, and share academic materials. College students are both consumers and creators in the internet community. They spend time devouring information from news sites, blogs, and social networking sites and posting content of their own. As a group, they appreciate interactive opportunities to access
information and contribute ideas. The internet has given college students a place wherein they can express their views and voice their opinions.

However, students also spend a significant portion of their time online doing non-academic activities. Though college students conceptualize the internet as a convenience, a majority of them use it as a source of amusement. A snapshot of a student’s internet activity for one day will show that a lot of time is spent emailing, IMing messengers or chatting, playing games, connecting on social networking sites, and watching videos.

The sampling procedure adopted to select the college students for the present study is elaborated in two different stages:

1. Selection of colleges in Chennai city
2. Selection of the college students

Selection of college

The study was conducted in Chennai district of Tamil Nadu. Chennai, the gracious capital city of Tamil Nadu is the fourth largest metropolis in India. Chennai is home to many educational and research institutions. A few Arts and Science colleges in the city include Loyola College, Women's Christian College, Madras Christian College and Presidency College, Chennai.

Chennai city is divided into 15 zones according to the Corporation of Chennai zonal map. Of this the most predominant arts and science colleges are located in zones 5, 6, 9 and 10. Therefore a convenience sampling technique (Kothari, 2001) was followed to select a total of eight (Four Government and Four Private) Arts and Science colleges for the present study.
http://www.chennaicorporation.gov.in/images/MAP_ZONE_WARD.jpg
The colleges selected were as follows

Government

1. Presidency College - Chepauk
2. Queen Marys College – Mylapore.
4. Pachaippa’s College – Chetpet.

Private

1. Justice Basheer Ahmed Sayeed College for Women – Teynampet
2. MOP Vaishnav College – Nungambakkam.
3. Loyola College – Choolaimedu.

Selection of sample

Phase I

Selection of the college students

The colleges selected for the present study comprise of various faculties and departments under the arts and science streams. The undergraduate degree course is for a period of 3 years whereas the post graduate degree course is for a period of two years. The students strength in the undergraduate course varies from 45-60 per class and for the post graduate course it varies from 10-20 per class.

Of the eight colleges two departments each were selected (Arts-1 and Science 1). Of which 25 students of the undergraduate sections and 15 students of the post graduate section were selected randomly. A total of 1478 students were selected for the study of which 278 students had to be excluded due to partially filled questionnaires. Therefore a total of 1200 students participated in the study.
The present study was conducted on 1200 male and female college students belonging to the age group of 17-21 years in the city of Chennai, Tamil Nadu, India. Of the 1200 college students, 600 belonged to Government colleges and 600 were from the Private colleges. The initial stage of sample selection involved random sampling technique. College students were chosen in such a way that each has an equal and independent chance of being selected.

**Phase 2 – Experimental Study**

The second phase of sample selection involved purposive sampling technique. In this present study, the investigator identified high internet users and selected them for the second phase of study.

Based on the data collected through random sampling technique, high internet users were identified and selected for intervention. From the data collected of 1200 students, 538 students were high internet users, 402 were moderate users and 260 of the students identified them as low internet users. From the high internet users, 100 subjects who had the same level of well-being, loneliness and communication were chosen. They were divided into two groups. One group was control group and the other was experimental group. The investigator chose 100 subjects for both the control and experimental group. Out of the 100 subjects allotted to this, 50 students were to control group and the other 50 to experimental group. The students chosen for experimental group were invited to the intervention program by the investigator. After obtaining their consent for participating in the intervention program, the investigator proceeded with the intervention.
Sample characteristics

The exclusion and the inclusion criteria used for selection of the college students presented in the table 1.

**TABLE 1**

Exclusion and Inclusion criteria for selection of the college students

<table>
<thead>
<tr>
<th>Exclusion Criteria</th>
<th>Inclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students below 17 yrs of age.</td>
<td>Students in the age group of 17-21 years</td>
</tr>
<tr>
<td>Students from the professional courses.</td>
<td>College going students</td>
</tr>
<tr>
<td></td>
<td>Students belonging to arts and science stream</td>
</tr>
<tr>
<td></td>
<td>Students willing to participate in the study.</td>
</tr>
</tbody>
</table>

Figure 7 shows the schematic representation of sample distribution and process of research conducted.
Figure 7. Schematic Representation of Sample Distribution

Male and female college students  
N=1200

Private college  
N = 600  
Govt. college  
N = 600

Identifying High Internet users Pre-test

High Internet users  
N = 538  
Moderate Internet users  
N = 402  
Low Internet users  
N = 260

Experimental Research

Purposive Sampling from High Internet users  
N = 538

High Internet users  
N = 100

Control group  
N = 50  
Experimental group  
N = 50

Intervention Program

Post test

Follow up

Follow up
3.7 TOOLS USED FOR THE STUDY

PHASE 1

A Questionnaire method was adopted to collect data to determine the effect of psychosocial intervention on internet usage among college students in Chennai City.

Administration of the tool

The tools were administered individually. Subjects were given the questionnaire and care was taken to see that the subjects filled in the forms individually without discussing. Any doubts regarding the questions were explained by the investigator.

Description of the tools- Phase 1

The various domains based on the objectives of the study included in the tool are

1. Demographic details
2. Internet usage.
3. Social Interaction
4. Internet dependency
5. Mental, Physical and Spiritual Well-being Scale (MPS Scale)
6. Loneliness scale
7. Communication Apprehension tool

1. DEMOGRAPHIC DETAILS

This part of the questionnaire included questions relating to name, gender, age, class studying, family’s monthly income, number of siblings, birth order, parental education, parental occupational status, time at which parents return home from work, computer literacy of parents, the students grades in academic performance, marks obtained in the previous examination. This background information of the
respondents was considered essential for the purpose of sample selection and defining the exclusion and inclusion criteria.

2. **INTERNET USAGE**

The main objective of the study was to identify the higher internet users. In this connection, the researcher gathered information relating to internet activities and observed the usage pattern among the general public. The Young People’s Internet Usage Questionnaire (http://derwen.wikispaces.com/file/view/Young_People%27s_Internet_Useage_Questionnaires.pdf) was used here. This questionnaire is adapted from Child Exploitation and Online Protection (CEOP) Centre. CEOP is a UK cross agency and cross business department of the Serious Organised Crime Agency, and is dedicated to eradicating the sexual abuse of children. It has produced a website about online safety, with different sections containing advice for 5-7, 8-10, and 11-16 year olds, as well as parents and teachers (www.thinkuknow.co.uk).

This included questions relating to the possession of computer, how often the college students use the internet and what is the most common activity online. Also an inventory listing the entire internet related activities that were preferred giving the frequency of usage for each specific activity. Therefore an inventory consisting of 14 items of which the internet was used (which included academic activities, other activities, chat rooms, instant messenger, social networking, blogs, gaming, web browsing, music, file sharing, shopping, news, internet TV, internet email). The alternatives given on a 5 point rating scale based on frequency of usage, every day, more than once a week, once a week, once a month, less than once a month. The score for this alternative are: everyday means 5, more than once a week means 4, over a week means 3, once a month means 2, less than once a month means 1. The higher the score, the higher is the usage of the internet. The other objective questions included were the place where the internet was used the most as in home, school, café, library, mobile phone, friend’s house.
3. SOCIAL INTERACTION

This part of the questionnaire also was taken from The Young People’s Internet Usage Questionnaire(http://derwen.wikispaces.com/file/view/Young_People%27s_Internet_Usage_Questionnaires.pdf) was used here. This questionnaire is adapted from Child Exploitation and Online Protection (CEOP) Centre. The questions asked here indicated the relationship of the college students with their family and friends.

Questions which answered the main way of communicating with offline friends, the number of online contacts, personal meeting with online friends, whether anyone accompanied them when they met their online friends, the source of meeting the “Instant messenger” online contacts (e.g., chat rooms, sharing, contact lists, through friends, gaming sites, blogs, social networking, voice over IP), possessions of a web camera at home, purpose of use of the web camera.

The hours spent for interaction purposes were noted down in a frequency questionnaire format. An inventory listing 13 items were included (talking on phone, watching television alone, socializing with friends, dating, spending time with significant others, extracurricular activities, community activities, interacting with parents, spending time with siblings, watching television while eating, checking emails at home and working on projects with other people). The frequency was given in the hour’s format ranging from 1, 1-3, 4-6, 7-10, 11-15, 16-20 and 20+hours respectively.

Another frequency table elaborated on how the college students would best describe themselves. Here 12 attributes were included on a 0 to 5 scale. The attributes that were included were whether the college students would describe themselves as introvert or extrovert, outgoing or shy personality, lonely or happy attitude, mood changes, relationship and family life satisfaction, support received at home and college.
4. INTERNET DEPENDENCY

An In-depth review on internet dependency was done to list the questions. In this connection Institute of Hygiene and Applied Physiology, Swiss Federal Institute of Technology at Zurich (ETH), Switzerland had developed the "Internet Behaviour Questionnaire" (http://www.paolocoletti.it/advancedcomputer/exercisesC/internet_questionaire.htm) with areas relating to social aspects, usage, feelings and experience. From this, the researcher picked up questions relevant for internet dependency and specific to the Indian scenario. The internet dependency inventory is in the closed ended form. It comprises of 10 questions which are to be answered either by a ‘yes’ or a ‘no’. The higher the score the higher is the dependency on the internet.

Their questionnaire evaluated how people interact with the internet and their experiences. A frequency table was designed to know about the state of mind of the college students which included characteristics as nervous, calm, indifferent and anxious. The 3 attributes evaluated were about the internet connection being fast or slow and the state of mind when the internet is restricted over a longer period of time, especially during holidays.

The next set of frequency questionnaire investigated questions about the strong necessity to get online, anticipation before using the internet, guilty felling of using the internet for a long time, role of internet in their dreams, spending more time on the internet than what they used to spend before, lying to friends about the time spent on the internet, restricting deliberately the internet usage due to excessive use, loss of time track while using the internet, any complaint received so far by others about long internet usage. These questions had answers with the choice of ‘Yes’ and ‘No’. The other questions included were, the 3 best and worst things about the internet that they could mention.
5. MENTAL, PHYSICAL AND SPIRITUAL WELL-BEING SCALE (MPS SCALE)

Participant well-being was measured using the MPS Scale (Vella-Brodrick & Allen, 1995). This 30-item scale was constructed to serve as an easy-to-use measure of holistic health and well-being. It consists of three subscales that assess mental, physical, and spiritual aspects of well-being of 10 items each, measuring positive aspects of the three facets of health. A five point rating scale is used with alternatives like almost never, not often, sometimes, often, almost always fetching a score from 1-5 respectively. These 30 questions are so framed that the higher the score on the scale better the subject’s wellbeing.

Scoring: items are scored on a 5-point scale with varying anchors per item. Subscales are scored individually by adding the respective items: mental well-being subscale (items 2,3,7,9,14,17,19,23,26 and 27), physical well-being subscale (items 5,8,10,12,15,20,21,25,28 and 29) and spiritual well-being subscale (items 1,4,6,11,13,16,18,22,24 and 30).

The mental well being questions included watching quiz programs, reading novels, taking judgmental decisions, engaging in games designed for mental stimulation, visiting places of culture arts or creativity, writing for pleasure, steps taken to improve the ones self environment, thinking before acting to situations, watching/reading/listening news, watching documentaries.

The physical well being questions included feeling of lethargy or tiredness, suffered nausea/vomiting in the past years, stomach aches/indigestion, signs of headache, feeling of constipation, dieting to gain or lost weight, waking up fresh / lethargy in morning, warmth in hands and feet, diarrhea problems, experience of aches and pains.

The Questions that were asked on spiritual well being included, spiritual help from God, thoughtful discussions about ethical or moral issues, study of religion or spiritual issues, engaging in serious self-analysis of behavior for the purpose of
improving moral behavior, sharing of spiritual experiences, belief of life after death, making use of an activity for obtaining inner peace (e.g., meditation, yoga, prayer etc.), discussion of matters relate to spirits, enhancement of personal or spiritual development, making use of meditation and/or prayer for the purpose of gaining inner peace.

6. **LONELINESS**

The UCLA Loneliness Scale was developed by Russell (1996). This tool measures the level of loneliness of the subject. The scale comprises of 20 statement, which was to be rated on a 4 point scale (i.e.) often, sometimes, seldom, not at all. It was found that all high scoring subjects were lonelier than low scoring subjects.

The questions included feeling in tune with people around, lack of compatibility, having someone to turn to, felling of loneliness, peer relationship, having common patterns with people around, feeling of isolation, contradictory ideas among friends, outgoing personality, feeling of closeness towards people, having superficial relationships, identity crisis, want of companionship, understanding ones nature.

7. **COMMUNICATION**

The Communication Apprehension Tool was developed by Jerabek & Jerabek (www.psychtests.com). As the purpose of the present investigation was to study the relationship of internet usage on communication the investigator chose a standardized communication tool comprising of 38 questions on a five point scale(i.e.)most of time, often sometimes, rarely, almost never.

The tool consisted of 38 items. The responses were scored according to the five alternative (i.e.) most of time (5), often (4), sometimes (3), rarely (2), almost never (1)The higher the score the better the communication but responses to the following item- Question no 13,14,15,16,17,18,19and20 had reverse scoring.
The communication tool was divided in two sections. The section A specifies the way the college students reacted to a situation and section B seeks responses that best suit the students.

Under section A, Questions such as mood detection, avid conversations style, problem solving without losing control of emotions, see things from someone else’s point of view, paying attention to the body language of others while talking, using “I” frequently in conversations, admitting when one is angry, understanding and telling when someone doesn’t understand, ease upon talking about feelings, manage to express ideas clearly, putting oneself in the other persons shoe, unaware of reactions of listeners while talking, trying to finish a statement for others, misinterpreting peoples words, difficulty in putting thoughts into words, uncomfortable in emotional situations, difficulty in other to understand what one says, fidgeting, difficulty in expressing feelings to others, people misinterpreting what one says.

The section B questions were, postponing discussing on touchy topics, repeating the same statement due to lack of understanding by people, feeling stupid to ask for clarifications on topics not understood, confronting to someone when feelings are hurt, calmness while dealing with someone who is intimidating, difficulty in understanding people who don’t have the same point of view, changing the way to talk depending on the other person, expressing disagreement with someone even though it may start an argument, difficulty to express ones opinion when others don’t share them, interrupting someone to share a point of view, unable to react when someone gets emotional, pause for a moment before giving a feedback, diverting one’s mind when the conversations is boring, uncomfortable feeling when not leading a particular topic, interrupting a speaker in mid sentence if disagree with a statement, trying to abruptly end a conversation that doesn’t interest oneself, being open about feeling to make oneself best understood.
PHASE 2

INTERVENTION PROGRAM

For both pretest and posttest the same test was utilized. High internet users were selected and an intervention program was conducted for 5 days. The investigator along with a professional trainer planned and executed the intervention program for 50 students. The selected samples were divided into two groups of 25 students for each program. The program was designed for 5 days of two and half hour duration on every alternate days. This study consisted of a pretest and posttest with a five day intervention program. A follow up analysis using the same tool to assess the effectiveness of the intervention program was conducted by the investigator. Lecture cum discussion, demonstration and practice of relaxation techniques and activities were conducted.

The intervention program was conducted to enhance the personal effectiveness of the sample in the study. Various activities and games related to the intervention program were conducted. Handouts were given for further reference. The program schedule of intervention conducted is as follows:

Day1:

On the first day of the workshop the trainer briefed the students on the training that was to be provided through the workshop. Initially to break the ice the students were grouped and divided into pairs. ‘What is internet usage?’ and one’s own personal experiences were discussed. Lecture cum discussion method was used to study, ‘How internet influences us physically, mentally, psychologically and socially and on how one can overcome its negative influences’ were discussed briefly. The session concluded with the summary, dates for next session and feedback were discussed.
Day 2:

On the second day, trainer helped in bonding the students and creating a familiarity among them. The bonding helped them to relax and open up. Activities like draw and write on the topic ‘I lead a healthy lifestyle’ with four key areas were given. The key areas were:

- Personal life
- Social life
- Relatives
- Friends

This was to bring to the awareness that the life they could have, if they want, and also to motivate them. NLP exercise called SWISH was also conducted which helps in changing unwanted behaviour (High Internet usage).

Day 3:

The session on day 3 aimed to impart strategies to manage stress-relaxation-nutrition-exercise –time management-goal setting- engagement in social activities was highlighted. A brief lecture cum discussion on, ‘what is stress, stressors, distress cycle and wellness cycle?’ were given. Activities on a total muscle relaxation which aimed in overcoming allergies, sleeplessness, restlessness and anxiety were taught. Healthy tips on dietary habits and yoga for improving posture as the subjects were high internet users and hence had the habit of spending long computer hours leading to unhealthy posture. Skills in time management as goal setting using JOHARI window and SMART goals (Specific Manageable Activity and Realistic Training) were taught. Breathing techniques were also taught.

Day 4:

On the fourth day, subjects were given activities to improve communication, social interaction and loneliness.
**Group Activity 1:** Rapport building to improve communication and social interaction.

**Group Activity 2:** Work sheet – to improve social interaction and overcome loneliness and identifying alternative behaviour.

**Group Activity 3:** Effective listening. To improving listening skills to demonstrate positive and negative body language and to demonstrate the importance of listening and empathy.

**Day 5:**

As communication, Social interaction & loneliness are inter related and are linked to self esteem to the sense of well being so exercise in self esteem were included to address the other variables.

**Lecture** – Self esteem and its relationship with communication, Social Interaction, loneliness and dependency.

**Activity 1:** SWOT analysis, Identifying strength & weakness to improve, self esteem to get positive impact, sense of well being.

**Activity 2:** Affirmation – (Positive self talk) (Lecture) Pygmalion effect – the power of beliefs.

**Activity 3:** Love Seat. Flooding Technique with positive statements a technique to improve self esteem and wellbeing.

**The Follow-up :**

The final stage of the study involved collecting the information about the impact created by the intervention program on the selected 50 adolescents belonging to the experimental group after two months. This was analyzed by comparing the
scores on well-being, loneliness and communication in the pre-test with the responses on the same tests in the follow-up.

3.8 PILOT STUDY

A pretest helps the investigator to equip with an understanding of the overall objective of each question and what it is trying to measure precisely. According to Rao & Vijayaragavan (1996), a pilot study can be conducted after the development of protocol and questionnaire on a small group. It helps to make some last minute changes in many situations, as one may need to change inclusions or exclusion criteria for cases or controls. The stringent criteria defined may not be practically suitable and may need some modifications.

The pilot study helped the investigator to equip with an understanding of the overall objective of the study, the research question and objective of each questionnaire and what it is measuring precisely. The pilot study enabled easy and convenient elicitation of information from the representative sample. This pilot study was conducted in order to see whether the subjects could understand the instructions given and to find out the suitability of the tool. This enables easy and convenient elicitation of information from the representative sample usually a small group or number so that successive requirements can be made. A small number of samples were selected so that successive requirements and modifications could be made with the schedule before gathering data from the larger group of respondents. The pilot study was conducted with a sample size of 50 before the commencement of the actual study in order to test the feasibility of this inquiry.

3.9 RELIABILITY AND VALIDITY

When a questionnaire has been designed, it is important to check for its reliability. The aim of testing is to ensure that the questions which are measured produce a reliable and valid measurement. Reliability means the consistency or repeatability of the measure. One can assess the reliability by re-administering the questionnaire to a group of respondents for the consistency of two responses.
Test-retest reliability was adopted for the questionnaire. The questionnaire was administered to a group of 50 subjects. After a period of 15 days, the same schedule was re-administered to the same group for establishing reliability. It was found from the results that the responses were almost identical. The results of both trials had high correlation for all the tools and thus proved that it had high consistency. The tools are compiled and presented in the form of a Questionnaire and is presented in Appendix-A.

The reliability of the tool used for the study was checked using Cronbach’s alpha coefficients (Kerlinger, 2001). It proves whether repeating the test/questionnaire under the same conditions produces the same results.

The Cronbach’s Alpha values were determined for the variables separately. None of the items pulled down the alpha value drastically; hence all the items have been retained. The values of Cronbach’s Alpha were found to be highly significant. The reliability scores are presented in the table below.

**TABLE 2**

<table>
<thead>
<tr>
<th>Tools</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet usage</td>
<td>0.832</td>
</tr>
<tr>
<td>Internet dependency</td>
<td>0.870</td>
</tr>
<tr>
<td>Social interactions</td>
<td>0.898</td>
</tr>
<tr>
<td>Well being</td>
<td>0.910</td>
</tr>
<tr>
<td>Loneliness</td>
<td>0.802</td>
</tr>
<tr>
<td>Communication</td>
<td>0.830</td>
</tr>
</tbody>
</table>

Validity of the tools

Another important aspect that needs to be studied before taking the questionnaire to the field is to ensure its validity. A questionnaire is said to be valid if it is successful in getting the complete information, which is relevant and precise from the study point of view. Validity can be assessed by obtaining confirmation from
different sources and comparing for agreement with the sample’s response (Rao, 1996).

The construct validity (Carmines and Zeller, 1979) was used to check the validity of the tools used for the study. Based on the review of related studies used to substantiate the hypotheses was used to check the validity of the constructs (variables) used for the study. The validity was found to be highly significant as the testing of the hypotheses proved to be in line with the constructs used by the previous researches.

3.10 CONDUCTION OF THE STUDY

The main study was conducted in Chennai during the year 2008 to 2011.

3.11 PROCESSING AND ANALYSIS OF DATA

The data obtained through the questionnaire were coded, classified and tabulated for further statistical analysis. A scoring method was developed and the scores were used for analyzing the data. The data were processed and analyzed using SPSS (Statistical package for Social Sciences) Version 16 check in summary chapter what version u have given. The descriptive and inferential analysis was computed. The descriptive analysis included frequency and percentage.

The inferential analysis included independent sample ‘t’ test, paired sample ‘t’ test, one way analysis of variance, Pearson’s correlation analysis, multiple regression analysis and repeated measures ANOVA. Independent sample ‘t’ test was used to compare the male and female students, government and private students and experimental and control group on the selected variables. ANOVA was carried out to compare the selected variables based on the three levels of internet usage. Pearson’s correlation analysis was computed to relate social interaction, well-being, communication and loneliness. Multiple regression analysis was done to predict the factors contributing to loneliness. Paired sample ‘t’ test and repeated measures ANOVA was used to compare the selected variables belonging to pre-test, post-test and follow-up.