"Assessment of addiction on digital Medias, the behavioral problems and academic achievement among the students in the selected Higher secondary school at Purba Medinipur, West Bengal."

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ABSTRACT
The investigator conducted a descriptive study to assess addiction on digital Medias, the behavioural problems and academic achievement among the students in the selected Higher secondary school at Purba Medinipur, West Bengal. The objective of the study were to identify the addiction on digital medias among the school going students, to identify the behavioural problems, to determine relationship between the addiction on digital medias and the levels of the behavioural problem, to determine relationship between the addiction on digital medias and the academic achievement, to find the association between the addiction on digital medias and the selected demographic variables. The conceptual framework was adopted for this study based on smart phone addiction model by the theory of Cheol Park and Ye Rang Park in 2014. Descriptive survey approach with descriptive design was adopted for this study. Hundred and twenty four (class XI) male and female students from 'Tamluk High School at Purba Medinipur District' were selected as sample through total enumerative sampling technique. The research instruments comprised of three tools-the semi structured questionnaire on socio demographic data, standard structured internet addiction test rating scale and standard Structure questionnaire on behavioural problem and result of previous board examination. Before application, validation and reliability test of tools were done. The findings of the study revealed that severe and mild internet addiction among students were 2.41% and 60.48% respectively. Majority of the students (ages 17 to 18 years) were 81.45%, having emotional problem 15.32%, conduct disorder problem 31.45%, hyperactivity problem 12.1%, peer problem 10.48%, pro social problem 23.39% respectively. There was significant positive co-relation between addiction on digital media and academic performance of the students [rdf71=0.47]. There was significant association between addiction on digital media [$\chi^2_{df(1)} =4.73, p<0.05$] and duration of internet use. The findings of the study have implication on nursing education, administration, practice and research.

I. INTRODUCTION

Virtual reality is always a charm for people of all ages. The students being the most imaginative part of our race get addicted to online interactive pleasure involvements mainly in lifelike multimedia games 'blue whale', 'momo game' easily. This allurement never always ends in a happy note.

In the present era, Internet has become an essential medium for education, communication, information sharing, and personal growth of every individual including adolescents. Especially, among adolescents, Internet communication applications have become a crucial social context for his or her development. But along with its uses, it is also leading to many risk taking behaviours among adolescents. The term adolescent has a broader meaning. It includes mental, emotional, and social maturity also as physical maturity. Consistent with Peterson [1] adolescence starts from the age of 12- 18 years, or from completion of grade school up to graduation level. Adolescent is that the most vital phase where the method of development goes on from a child into an adult.

Internet has developed dramatically and its use has spread to all the fields and age groups. Adolescents aren't exceptional from the utilization of Internet. The rapid climb of Internet communication and its potential to vary the way one could communicate and gather information has brought both positive and negative impact. So the positive impact of internet uses involve any information reaching in no time to any part of the world; individuals from worldwide could communicate without distinctions of nationality, race, gender, class; variety of information is out there on the internet helps other fields' research effectively. On the negative side, one can access all kinds of information including self distraction, faulty socialization, risk taking behaviours, loneliness, etc.[2][3] There is no doubt that the growing popularity of Internet communication applications among

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adolescents has become a crucial social context for his or her development. Though wealth of data is available on the web, the misuse of this is often becoming more evident among adolescents. Studies report that adolescents access pornography, hate and terrorism related sites, and they are vulnerable to sexual solicitation and predation, suicidal game like 'blue whale', 'momo game', cyber bullying and harassment. In recent times, studies have reported pathological use or Internet addiction among adults and adolescents.[4][5]

So more internet addicts adolescent may develop more social isolation, and an outsized number of users face abnormality, mental disability, depression, abnormal attitude, behavioural problem like emotional problem, conduct disorder, hyperactivity problem and that they do poor performance academically.

Background of study

School-going children form a crucial vulnerable segment of the nation's population. Children within the school-going age bracket of 5 to 16 years constitute a complete of 30% of the entire population. School age is a dynamic. The importance of early detection of emotional and behavioural problems is recognized worldwide and a number of researches have been conducted in developed countries. However, there has been little systematic research into childhood behavioural problems in developing countries.

Adolescents are more vulnerable than adults to the negative impacts of the web world. Teens could also be trapped in their own cyber world, suffer from psychological pains, and eventually destroy their own personal and social networks thanks to Internet addiction or excessive Internet use (Jonson-Reid, Williams, & Webster, 2001 [6]). Internet addiction or excessive Internet use among adolescents varies across nations with prevalence rates of 7.5% in Taiwan (Yen, Yen, Chen, Chen, & Ko, 2007 [7]) to 1.1% in North Cyprus (Bayraktar & Gün, 2007 [8]) to 1.6% in South Korea (Kim, Ryu, Chon, Yeun, Choi, et al., 2006 [9]). Other challenges related to excessive usage of the web include lowered concentration, lack of sleep, poor school attendance and performance, vision problems and a good range of behavioral problems (Block, 2008 [10]). In addition, young adolescents are at high risk of being approached by online predators since they're relatively new online activities, actively seeking attention, isolated, easily tricked by adults, and confused regarding their sexual identity (Wolak, Finkelhor, Mitchell & Ybarra 2008 [11]). Although they become more curious about sexuality (Ponton, & Judice, 2004 [12]), they're innocent about the sexual activity that get youth into trouble online (Wolak, Finkelhor, Mitchell, & Ybarra, 2008 [11]). Between 2000 and 2005, youth Internet users experienced aggressive sexual solicitations at a better rate than adult users (Mitchell, Finkelhor, & Wolak, 2007 [13]). For example, the National Juvenile Online Victimization(N-JOV) study found that 99% of victims of Internet-initiated sex crimes involved adolescents between the ages of 13 to 17 years of age (Wolak, Finkelhor, & Mitchell, 2004 [14]).

Dr. Ivan Goldberg was introduced the term "internet addiction" in 1995 for pathological compulsive internet use.[15] Griffith [16] considered that it a subset of behaviour addiction and any behaviour that meets the 6 "core components" of addiction, i.e., mood modification, salience, tolerance, conflict, withdrawal and relapse. While Davis [17] avoided the term internet addiction, referring it as a dependency on psychoactive substances, he instead preferred the term "pathological internet use" (PIU). Young [18] also explain excessive internet use a disorder of impulse control which is most closely to pathological gambling, in DSM IV and adapted the DSM IV criteria to relate to internet use within the web Addiction Test which was developed by her. According to her, various kinds of internet addiction are cyber-sexual addiction, cyber-relationship addiction, net compulsions, information overload, and computer addiction.[19] Caplan [20] tested Davis' cognitive behavioural model of PIU. His findings indicated that social isolation plays an important role in behavioural symptoms of PIU than does the presence of psychopathology. Hence, Caplan recommended replacing the term "pathological internet use" with "problematic internet use."

Furthermore, internets also play a part of student role in order to facilitate their study. Nevertheless, the internet evolution has also bring its dark side among users that lead to internet addiction phenomenon.[21][22][23] The effect of this phenomenon is very harmful toward the user who misuses the internet. The negative outcomes of internet addiction studied by certain researchers are listed as follow: psychological altered, personality and physical changes, impairment in some relation, poor grade and social discomfort.[24][25][26]

Arshad Hossain, Dr. Debabrata Debnath, 2016 "internet is an informal term of the world-wide communication network of computer. The capacity of the internet for socialization is a primary reason for the excessive amount of time people spends having real time interaction using e-mail, discussion forums, chat rooms and online games (Grohol 2005). There are no universally accepted definitions for the captioned condition, but a researcher seems to agree that it involves problematic usage of computer that is time consuming and causes distress or impair functioning in important life domains."[27]

Whang L, Lee S, Chang G [28] (2014) conducted a study on the 13,588 users (7,878males, 5,710 females), out of 20 million from a significant portal in Korea, participated during this study. Among the sample, 3.5% had been identified as internet addicts (IA), while 18.4% of them were classified as possible.

Kim H, Park D (2015) "explored that AMOS 20.0analysis was used to determine the influence of internet game addiction and to identify its correlation with SNS addiction tendencies. The overall fitness indices hypothetical model was good: (X2=78.981, p<.001),X2//df =3.43CFI= .962, TLI=.941, RMSEA=.080. Out of 5 paths, 5 were statistically significant. SNS addiction had the greatest impact on Internet game addiction among the male middle school students in this model."[29]

Ye Y, Lin L (2015) result shows that there was positive correlation in between the Locus of control and Loneliness and Preference for online social, but negatively related to Subjective well-being; Loneliness was positively correlated and Subjective well-being was negatively correlated to Preference for online social interaction; and Loneliness and Subjective well-being had a full mediating effect between the relationships of online social interaction and Locus of control. It was also found that lonelier, unhappy, and externally controlled students were more likely to be engaged in online social interaction.[30]

Gupta A, Mongia M, Garg A [31] (2017) - A total of 109 children (22.7%) were found to have behavioural problems with initial screening by PSC/Y-PSC. This is slightly higher than another Indian study. In India, use of internet is excessive, especially in the young population. Hence, it was found essential to study pattern of internet usage in young adults in Indian setting and its relationship with their mental and physical health. In India, the attempts to research in the field of mental health of school children are minimal. No study has been carried out to find the behavioural problems of children at the school level, which is the crucial era of child's life.

Though studies have been conducted on internet use among adolescents, some of the variables such as the purpose of internet use, duration of internet use, parental supervision, risk taking behaviours, sex‐ related risks, gambling, impact on education, behaviour problem etc. need to be explored periodically. With this background, I undertook the present study to take a close look on this issue.

Need of the study
Digital media use can provide many benefits but a problematic use can be commonly identified. According to Bianchi and Philips problem on internet use is a function of age extraversion and low self-esteem but not neuroticism. In an Australian study, carried out on 32 young aged between 16 to 24 years focusing on the psychological factors relating to internet use and whether internet addiction was occurring among this group.

Educational programming, Most cultures have used visual arts, dramas and stories to speak myths, ideas and values to the new generation .These visual arts and stories could also be immoral. Internet use is one among the foremost prevalent media influencing adolescent's lives. The impact of internet on children depends on many factors, like how they watch, their age and personality, whether or not they watch alone or with adults and whether their parents talk with them about what they see any programme in internet.

Personality development by digital media can help children develop skills and knowledge that will help them in school Ride out (2006).The best example is "Sesame Street" which helps in developing skills of data of numbers, letters relationship and vocabulary among children. On the opposite hand, internet has also some side effects, it affects the training and faculty performance if it cuts into time kids need for activities crucial to healthy mental and physical development. The impact of internet violence on children is of special concern. Young children are prone to exposed in violence not only on crime shows, but also in cartoons, and in news. They have made suicide by playing 'blue whale', 'momo game'.

The Digital media in all forms have become a primary influencing instrument on the moral development of people .Various sorts of behavioural problem

These may include:
• Attention deficit hyperactivity disorder (ADHD)
• Oppositional defiant disorder (ODD)
• Anxiety disorder.
• Depression.
• Bipolar disorder.
• Learning disorders.
• Conduct disorder
• Emotional problem
• Peer problem

- Pro social problem

Alam S, Hazrul Nik Hashim N, Ahmad M, Che Wel C, Nor S, Omar N [32] (2014) conducted a research study on 50 school students; 16 years found that extreme addictions to the use of social media among adolescents and children can lead to depression. In addition, there will be a severe mental stress and functional decline and activities daily spend a lot of time solely on social media sites.

Nalwa K, Anand A [33] (2004) conducted a research study among school students 16-18 years old in India, two groups are identified dependents, independents. Significant behavioural and functional usage differences were revealed between two groups. The students, who were dependents, were found to delay other work to spent online, lose sleep because of late night logons and feel life would be boring without internet.

Problem Statement
Assessment of addiction on digital Medias, the behavioral problems and academic achievement among the students in the selected Higher secondary school at Purba Medinipur, West Bengal.

Purpose of the study
To assess the addiction on digital medias, the behavioral problems and academic achievement among the students in the selected Higher secondary school that help to identify the problems among the students.

Objectives of the study
  i.   To identify the addiction on digital medias among the school going students.
 ii.   To identify the behavioral problems among the school going students.
iii.   To determine relationship between the addiction on digital medias and the levels of the behavioral problems among the school going students.
 iv.   To determine relationship between the addiction on digital medias and the academic achievement among the school going students.
  v.   To find the association between the addiction on digital medias and the selected demographic variables.

Assumption
  1.   Students have addiction on digital media.
  2.   Students may have some behavioral problem
  3.   The academic achievement has association with digital media.

Variables
Variables are defined as an attribute of an object of study , qualities, things or situations that change or vary. The study variables are
Research Variables –
1.   Socio-demographic variables (age, sex, religion, occupation of parents, monthly income, type of family, having how many siblings, education of parents, marital status of parents)
2.   Addiction on Digital Medias
3.   Behavioral problems
4.   Academic achievement

Operational definitions of important terms
In this study-
1.   **Addiction**
In this problem statement addiction is a psychological and physical inability to stop doing particular activity .Student compulsively uses digital technology, which would manifest as another form of addiction if that technology wasn't as easily accessible to them. It is measured By DR. Kimberly Young's Internet Addiction Test (IAT) tool.

2.   **Digital Medias**
Digital media are encrypted in such a way that machines can read that encrypted formats. They can also be distributed in the digital electronic platforms for viewing, modifying and preserving by using Internet.
- Software
- Digital images
- Digital video
- Video game

- Web pages and web site
- Digital audio
- Different apps in smart phone

3.   Behavioral Problems
Students are experiences
- Emotional problem,
- Conduct disorder,
- Hyperactivity problem,
- Peer problem,
- Pro social problem

It is assessed by Dr Robert Goodman's Strengths and Difficulties Questionnaire (SDQ)

4.   Academic Achievement – results of last board examination (Secondary exam result) was taken as their academic achievement.

5.   Higher Secondary School Students – in this study the school students refers to the male and female student of class XI.

Conceptual framework
The conceptual framework model is a schematic representation of a theory. It provides certain frame of reference for clinical practice, research and education.
Conceptual framework is necessary in a study because it provides a distinctive frame of reference. It gives direction to the search for relevant questions about phenomena and they point out solution to practical problem.

In this study, the conceptual frame work is based on smart phone addiction model by Cheol Park and Ye Rang Park.

A. Antecedents
1) Parental variables
There is significant effect of family on adolescent's game addiction. Parental variables that affect internet addiction are parents' age, income, education, raising attitude, whether parents are working together, attitudes towards devices used to access internet and addiction tendency. In many studies, the lower the parents' income and education were, the higher the possibility of children having problems was. When parents' education is lower, knowledge about seriousness of internet addiction is also lower, so it is easy to give the availability of internet using to their children, resulting in higher internet addiction rate. Younger parents tend to have more generous adoption attitudes about internet, and higher usage frequency. As a result, their children have higher chance of contact and using internet and become game addicted, suicidal tendency increased. Children whose parents both are in service have longer time alone and because of lack of parent's amount of time to take care of their children. Types of parenting can be divided into authoritarian, permissive, and responsive. Permissive parents are most likely to have children with higher internet addiction rate. Furthermore, if parents themselves are heavy users of internet or addicted to it, their children have higher chance to be exposed to, resulting in higher smart phone addiction rate.

2) Child variables
Child variables affecting child internet addiction are child's age, gender, number of siblings, and whether they attend education institutions or not. The lower child's age is, mental development is incomplete and easily immersed, having higher possibility of internet addiction. In addition, boys tend to have more eagerness to know about tools and needs for trial. Also, boys tend to be more inattentive and lack of self-control, so they have higher possibility of internet addiction. While higher number of siblings of children means higher possibility of interacting with other people, lower number of siblings of children means more time spending alone, resulting in higher possibility of addiction to digital tools like computer, smart phones. In addition, when a toddler attends education institutions like preschool or kindergarten, they're likely to be under teacher's control and have longer to interact with peers, leading to lower internet addiction rate. On the opposite hand, children not attending any education institutions have longer alone reception and since of lack of parents' resources, they need higher possibility of internet addiction.

B. Consequences
1) Mental development
Excessive uses of computer have negative effects among adolescent. Adolescent with higher internet addiction rate of are likely to have problems with mental development such as emotional instability, depression, Attention Deficit Hyperactivity Disorder (ADHD), anger, and lack of attention. Because the devices such as computer, smart phone provide sensible and instant stimuli through visual sense and hearing sense, overuse of smart phones is likely to make children who are mentally premature, unstable. Adolescent have higher chance of being depressed. Furthermore, it causes mental immaturity like aggressiveness and lack of attention. Internet addiction brings results such as adolescent's lack of attention and self-control.

2) Physical development
Higher internet addiction rate predicts problems in physical development like impairments in visual/hearing senses, obesity, and body imbalance thanks to internet addiction. When you check out the screen light continually, it's bad for eye health of adults, but children are likely to possess more severe impairment in sight. Also, once you use smart phone for an extended time with earphones, bad effects on hearing sense are expected. When you are internet addicted, you have lower chance of interacting with other people and decrease in physical activities will increase the possibility to be obese. Children are have not reached the age to make rational decisions yet, so they can easily to be internet addicted .younger children, boys, children with less siblings, and not attending education institution, predict smart phone addiction, show problems in mental and physical development. In other words, adolescents hooked in to internet has higher chances of getting problems in mental development like attention deficit, emotional instability, depression, anger, and lack of control. Efforts of parents and society to prevent the addiction are needed as because of internet addiction, there is big personal and social loss. First, parents should strive to spend more time with their children. Parents should realize the strong influence of internet on their children and it is important not to easily give electronic devices to access internet to children. It is critical to understand that a convenience of a moment can cause serious results of children's internet addiction. Because children have weak control of themselves, they're in need of parents' control. However, internet can be a threat to our children, the future of humanity. Parents and therefore the society should strive to attenuate the side effects of this without cease, because children are the foremost valuable future resources that can't get replaced with anything.
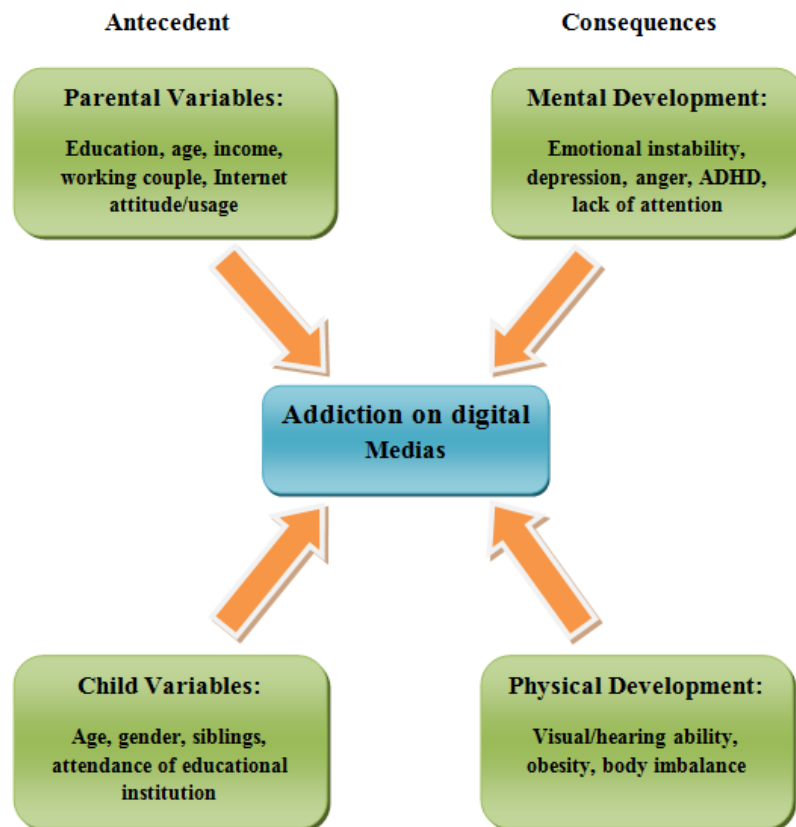

Figure 1: shows Conceptual Model of addiction on digital media based on Cheol Park and Ye Rang Park model.

Delimitation
1. The study subjects were delimited to students of class XI of the selected Higher secondary school.
2. Who were willing to participate in the study.

Summary
This introductory chapter has deal with background of the study, need of the study, problem statement, objectives, operational definitions, assumption, conceptual framework and delimitation of the study.

Organization of the report
Chapter I
Introduction: This chapter deals with the introduction, background of the study which includes the background of the study, denoting the magnitude of the problem, this chapter also denotes the justification for conducting the study. It further includes the problem statement, objectives of the study, assumptions and theoretical framework used for the study. The rest of the study will be in the next four chapters.

Chapter II
Review of literature: This chapter will deal with literature review with research and non-research literature related to the study. This literature will be divided in two sections.

Chapter III
Methodology: This chapter will explain research methodology adopted for this study and plan for data analysis which includes research approach, research design, variables, setting of the study, sample, sampling technique, sample size, data collection tool and technique, development and description of tools, procedure for data collection and plan for data analysis.

Chapter IV
Analysis and Interpretation: This chapter deals with the analysis and interpretation of the data collection. The investigator divided the data based on objectives of the study into constituent parts to obtain answer to the research problem. Data were collected through interview schedule on demographic variables. The data obtained were tabulated and then analyzed, interpreted with the help of descriptive and inferential statistics.

Chapter V
It will deal with the summary of the study findings, conclusion, implication of the study and recommendations. In this section, the study is summarized by giving conclusions based on findings and their implications for nursing. Limitation of the study and important recommendations and suggestions for the future study are also given. It is followed by reference and appendices.

II.   REVIEW OF LITERATURE
Review of literature is an essential step in the development of research project. It helps the investigator to gain knowledge, insight into the various aspects of the problem under study. It is a prerequisite and essential activity of scientific research project. An extensive review of the related literature is carried out through journals, books and also research and non- research articles. It helps the investigator to identify variables, framing conceptual framework for the study, developing methodology, selection and development of tools for data collection.
Researcher usually undertakes a thorough literature review to familiarize them with the knowledge base. It also plays role at the end of the study as researcher tries to make sense of his/her findings.
For this study, an extensive review of related research and non-research literature was carried through library studies and online search.
Review start at the beginning of the study and end in writing of research report. The investigator provided in depth information of a specific field to formulate the research design by review literature.
The review of related literature for the present study was organized under the following headings.
• Literature related to internet addiction among adolescents
• Literature related to adolescents behavioral problems.
• Review of literature related to relationship between internet addiction and behavioral problems.
• Review of literature related to relationship between internet addiction and academic achievement.
• Review of literature related to effects of Internet Use on Academic achievement and behavioral Adjustment.
• Literature Review related to association between internet addiction and socio demographic variable

Literature related to internet addiction among adolescents.

Karacic S, Oreskovic S [34] (2017) had conducted a research study on 1078 adolescents in which 534 boys and 525 girls (aged 11-18 years) attending elementary and grammar schools in Croatia, Finland, and Poland to identify the Internet addiction through the phase of adolescence. Simple random sampling method is used. The result shows that 84% adolescents mostly used the Internet for entertainment (905/1078).More female (105/525, 20.0%) than male adolescents used it for school/work (64/534, 12.0%). Polish adolescents (71/296, 24.0%) mostly used Internet for the purpose of school/work, followed by Croatian (78/486, 16.0%) and Finnish (24/296, 8.0%) adolescents. Highest level of internet addiction was found among the 15-16-year-old age subgroup and lowest level was found in the 11-12-year-old age subgroup. The result also showed that there was weak but positive correlation between Internet addiction and age subgroup (P=.004). Irrespective of all age subgroup, male adolescents mostly contributed to the correlation between the level of internet addiction and the age sub group (P=.001). Adolescents aged 15-16 years, especially male adolescents, are the most prone to be internet addicted, whereas adolescents aged 11-12 years show the lowest level of Internet addiction.

Sasmaz T, Oner S, Kurt A, Yapici G, Yazici A, Bugdayci R et al. [35] (2014) conducted cross-sectional study included 1156 students, among whom 609 (52.7%) were male. The students mean age was 16.1 ± 0.9 years. 79% of the students had a computer at home, and 64.0% had a home Internet connection. The result shows in this study that 175 (15.1%) students were defined as Internet addicts. Whereas 20.4% boys and 9.3% girls were internet addicted ($P < 0.001$), there was independent relationship between Internet addiction with gender, grade level, having a hobby, duration of daily computer use, depression and negative self-perception. According to their study results, the prevalence of Internet addiction was high among high school students.

Lakshmana G, Kasi S, Rehmatulla M [36] (2017) conducted a study assessed the risk-taking behaviours and related problems among adolescents while using the internet and parental supervision on it. The study followed descriptive cross-sectional research design and the data was collected from 179 school going adolescents through semi-structured interview schedule. Around 60% of the participants belonged to male (M = 14.5, SD = 1.2 years), mean time spent on internet use in the previous week was 6 hours, 41% uses to computers at home, and 28% had arguments with their care givers due to their pattern of usage of internet. There was a significant difference in personal level risk-taking domains (t = 3.037, df = 177, P < 0.01) and emotional domain (t = 3.127, df = 177, P < 0.01) between male and female respondents. It indicates that boys were taking more risks than girls. The result shows that 8th grade students (M = 1.63, ±1.87) were suffering from emotional problem in high level. There was Significant difference between the number of hours spent on online in a week and arguments with parents (t = 2.517, df = 177, P < 0.05). The result also shows that there was significant difference in emotional problems (F = 3.212, P < 0.05) and sex-related risk (F = 4.735, P < 0.05) domains between two group that are parental filtering and non-filtering group (F = 3.212, P < 0.05). Results clearly indicate that there is an evidence of risk-taking behaviours among adolescents those who were in lack of parental supervision.

Meena P, Mittal P, Solanki R [37] (2012) conducted a study where 200 subjects, both boys and girls were included in the cross sectional study that was given a 20 items Young's internet addiction test modified for social networking sites. The responses were analyzed using chi square test and Fisher's exact test.24.74% of the students were having occasional or 'frequency' problems while 2.02% of them were experiencing severe problems as they spent excessive time of using social networking sites. In this decade, the popularity of social media is increased, teenagers are spending significant time to social networking on websites and are prone to get 'addicted' to such form of online social interaction.

Sharma A, Sahu R, Kasar P, Sharma R [38] (2014) conducted a survey on 391 students and found that males students were more addicted to the internet use than female. Both boys and girls spent 1.29 hours per day on internet. There was only 0.3% student's addicts of internet, remaining had normal, mild, and moderate systems. The study also concluded that internet addiction was mounting problems in students particularly of professional course. Therefore, policies and strategies for prevention of internet addiction as well as therapeutic interventions should be monitor that should be monitor that would promote healthy and safe of the internet.

Goel D, Subramanyam A, Kamath R [39] (2013) found that most of the internet addicts used it habitually in the evening and nights as compared to other internet users who used internet in the mornings and afternoons. The results also showed that there were differences of accusing the internet differences of accusing the internet addiction and the hour of use every day. Addicts took more times on internet than they had already intended. Internet addicts also showed some signs of poor mental and physical health. The researchers did not find any connection between self esteem score and internet addiction. But they explored high anxiety, depression score among respondents. Researchers also set some boundaries for internet addicts.

Yadav P, Banwari G, Parmar C, Maniar R [40] (2013) took a sample of 621 students from six English medium schools of Ahmadabad to identify the level of internet addiction. They used the Young's Internet addiction test and applied the logistic regression analysis method to find the predictors of internet addiction (IA). The results show that 65 students had internet addictions that was projected by time spent online etc. They also found a strong positive relationship internet addiction and stress, depression and stress. Ahead, the researchers claimed that internet was relevant clinical concept, and requires conducting research in developing countries also. They asserted that the students of high school who were from anxiety and depression should be screened internet addicted.

Sinkkonen H, Puhakka H, Meriläinen M [41] (2014) conducted a study to investigates Internet use among Finnish adolescents (n = 475) combining qualitative and quantitative research. Internet use was evaluated using the Internet addiction Test (Young, 1998a, Young, 1998b). The data was divided into three parts consistent with the test scores: normal users (14.3%), mild over-users (61.5%), and moderate or serious over-users (24.2%). The most common reason to be used was having fun. While half of the students reported disadvantages related to their use, further thorough analysis revealed that students with serious overuse didn't report any harm caused by using internet. As disadvantages of using internet, students reported that it's time-consuming and causes mental, social, and physical harm and poor school attendance. Four factors of Internet addiction were found, and two of them, a statistical difference between females and males were found.

Kuss D, van Rooij A, Shorter G, Griffiths M, van de Mheen D [42] (2013) conducted a study with total of 3105 adolescents in the Netherlands filled out a self-report questionnaire including the Compulsive Internet Use Scale (CIUS) and the Quick Big Five Scale. Results indicate that 3.7% of the sample was classified as potentially being hooked in to the internet. The use of online gaming and social applications (online social networking sites and Twitter) increased the danger for Internet addiction, whereas extraversion and conscientiousness appeared as protective factors in high frequency online gamers. The findings support the inclusion of 'Internet addiction' within the DSM-V.

Literature related to adolescent behavioral problems
Srinath S, Kandasamy P, Golhar T [43] in 2010, conducted on a community-based sample in Bangalore, revealed the prevalence rates of behavioural problems to be around 12.5% in children up to 16 years of age.

Gupta A, Mongia M, Garg A [44] (2017) conducted a study in which five hundred children aged 6–18 years were randomly selected from a government school in Kanpur, Uttar Pradesh, and assessed for cognitive, emotional, or behavioural problems using standardized tools. About 22.7% of children showed behavioural, cognitive, or emotional problems. Additional screening and evaluation tools pointed toward a greater prevalence of externalizing symptoms among boys than girls. The study highlights the importance of regular screening of school children for preventive as well as timely remedial measures.

Pathak R, Sharma R, Parvan U, Gupta b, Ojha R, Goel N [45] (2011) conducted a study where a school based cross-sectional study was conducted. A stratified random sampling was done. 1150 adolescents in 12 to 18 year of age group in grades 7 to 12 in 10 co-educational schools (government run and private) were the themes of the study. Behavioural and emotional problems were assessed by using Youth Self-Report (2001) questionnaire. Family stressors were assessed by using a pre-tested 23 item questionnaire. Prevalence of behavioural and emotional problems in adolescents was found to be 30%, with girls exceeding boys in all types of age groups. Internalizing syndrome was the foremost common (28.6%) psychiatric problem. On the step by step, a thorough regression analysis, a distinguished lack of emotional proximity to mother, had maximum odds (3.489), followed by addiction in father (2.642) and marital discord in parents (1.402). Type of school, family types, socioeconomic status, relationship with father, mother & employment and academic status weren't found to be significantly associated. An alarming number of our adolescents suffer from emotional and behavioural problems which have their roots within the family environment.

Adhikari R, Upadhaya N, Gurung D, Luitel N, Burkey M, Kohrt B et al. [46] (2015) conducted a qualitative studies on child behavioural problems 72 free list interviews and 30 Key Informant Interviews (KII) were conducted with community members of Chitwan district in Nepal. Result recommends that aggressive and ferocious habitual attitude, not listening to studies, getting angry over small issues, fighting back, disobedience, and stealing were the foremost commonly identified behavioural related problems of children, with these problems seen as interconnected and inter-reliant. The research study suggest that community members view towards the family, community and institute environments as being the causes of kid behavioural problems, with serious impacts upon children's personal growth, family harmony and social cohesion. The plans described by

parents and teachers to manage child behavioural problems were talking, listening, consoling, advising and physical punishment. As perceived by children and other community dwellers, children in rural Nepalese communities have several behavioural related problems. The research study results suggest that multi-level community-based involvements targeting peers, parents, teachers and community leaders might be a feasible approach to deal with the identified problems.

Benvegnú L, Fassa A, Facchini L, Wegman D, Dall'Agnol M [47] (2005) conducted a cross-sectional study of 3139 children and adolescents from poor areas of the city of Pelotas, southern Brazil. They employed the child behaviour checklist for estimating BP. They performed multivariable analysis using Poisson's regression for confounder control. The ratio of workers was 13.8% (7.3% among children and 20.7% among adolescents). Prevalence of Behavioural Problem among workers and prevalence ratios (PRs) were 21.4% (PR = 1.3; CI 0.9–1.9) among children and 9.5% (PR = 0.6; CI 0.4–1.0) among adolescents. Considering workers only, the risk of Behavioural Problem was 2.7 times greater (CI 1.4–5.1) among children when compared with adolescents. There were an association with BP and Working in domestic services among children and beginning to work at an early age among adolescents.

Kafle T, Kafle T, Mashreky S, Rimal H, Sapkota D, Pokhrel A [48] (2019) conducted a study adopts analytical cross-sectional design with sample size 1500 involving 11 to 17 year school going adolescents and carried out in Eastern Development Region of Nepal from August to December 2016. Multistage probability sampling technique was used to draw the sample and validated self-report SDQ was used to estimate the behavioural problems. Ethical approval was permitted from ERB of Nepal Health Research Council. Written informed consent was taken from each participant before collecting the data. Gathered data were entered using Epi Data software and processed to SPSS version 16 for analysis. Both vicariate and multivariate analysis were carried out. The prevalence of total (overall) behavioural problem was found among 35.0 % adolescents. While classifying, 13.3% were affected by emotional disorder, 11.20% from conduct problem, 7.2% from hyperactivity/inattention, 4.9% from peer relationship problem and 2.1% from prosocial activities. After multivariate statistical analysis, female adolescents, adolescents of uneducated or less educated parents (less than 10+2), residing in mountain ecological belt and adolescents without parents (dead or separated) were found positively associated with behavioural disorders. Total behavioural problem was found among 35.0% adolescents. Adolescents of less educated parents, female sex, Mountain ecological belt and those without parents were more vulnerable to behavioural problem. Therefore, parental care seems to be considerably essential to scale back the behavioural problems among children.

Magai D, Malik J, Koot H [49] (2018) conducted a study where Emotional and behavioral problems (EBP) during childhood and adolescence are a common concern for parents and mental health stakeholders. However, a small amount has been documented about their prevalence in Kenyan children and adolescents. This study aimed to close this gap. The study included Child Behavior Checklist reports from 1022 Kenyan parents on their children (ages 6–18 years) and Youth Self-Reports from 533 adolescents (ages 12–18) living in Kenya's Central Province. EBP in Kenya are extremely prevalent likened to multi-cultural standards for parent reports, with 27 and 17% scoring within the borderline and clinical range, respectively. Based on parent reports, younger children scored higher on EBP than older children, and better on internalizing problems. Based on self-reports girls scored above boys, particularly on internalizing problems. The study provides evidence on elevated parent-reported EBP in Kenyan youths. Mental health providers should focus on interventions that reduce EBP in Kenyan youths.

Kaur R, Vinnakota A, Panigrahi S, Manasa R V [50] (2018) conducted a study where Orphans and the other vulnerable children and adolescents (OVCA) living in institutional homes are more prone to behavioral and emotional problems than others as they're bereft of a family's love and care. For that, they carried out a thorough evocative study to explore the behavioral and emotional problems in these institutionalized children. The sample consisted of 292 orphans and OVCA in an institutional home of Visakhapatnam city. The socio demographic data were collected using a semi-structured questionnaire. The Strengths and Difficulties Questionnaire (SDQ) with impact supplement was wont to assess the behavioral and emotional problems in them. In this research study, 49 (16.78%) out of 292 children and adolescents were found to be having behavioral and emotional problems. Factors like age, sex, reason for being within the institute, age of admission, and years of stay within the home were all seen to be significantly associated (P < 0.05) with emotional and behavioral problems. Conduct problems (34.90%) were found to be most prevalent followed by peer problems (15.80%), emotional problems (14.70%), hyperactivity (8.60%), and low prosocial behavior (3.40%).The present study shows that the orphans and OVCA in institutional homes are susceptible to behavioral and emotional problems. The screening for conduct problems, emotional problems, hyperactivity, and peer problems must be done at a daily

basis for these children. Given the paucity of knowledge during this regard, several multicenter studies also got to be done to urge an overall comprehensive view of those problems.

Compas B, Davis G, Forsythe C, Wagner B [51] (1987) conducted a study where Stressful events in the lives of 309 10- to 15-year-olds and stressful events and psychological symptoms reported by their parents, were examined in a 9-month research study. Students self-claimed emotional/ behavioral problems were anticipated by their reports of stressful events and their fathers' reports of psychological symptoms in cross-sectional analyses. Analysis at follow-up after controlling for initial reports of emotional/behavioral problems and prospective analyses predicting from, first assessment to follow-up yielded significant effects for Ss' self-reported stressful events. Mothers' reports of children's problems were anticipated by mothers' psychological symptoms in cross-sectional analyses and at follow-up after controlling for initial emotional/behavioral problems. Only pro-assessment levels of maternal reports of emotional/behavioral problems predicted mothers' reports of their children's problems 9 months later.

Strittmatter E, Parzer P, Brunner R, Fischer G, Carli V, Durkee T et al. [52] (2016) conducted a Longitudinal studies of prospective predictors for pathological Internet use (PIU) in adolescents as well as its course are lacking. This study was carried out within the framework of the European Union-funded project "Saving and Empowering Young Lives in Europe" over a 2-year period. The sample of 1444 students at the baseline investigation (T0); 1202 students after 1 year (T1); and 515 students after 2 years (T2). Structured self-report questionnaires were administered at all three time points. PIU was measured by using the Young Diagnostic Questionnaire (YDQ). Social, psychological, demographic and Internet use-related factors (i.e., online activities) were considered as prospective predictors. The occurrence of PIU was 4.3 % at T0, 2.7% at T1 and 3.1 % at T2. However, only 3 students (0.58 %) had tenacious categorical PIU (YDQ score of ≥5) over the 2-year period. In univariate models, a spread of variables that are previously identified in cross-sectional investigations predicted PIU at T2. However, multi-dimensional investigation showed that only previous PIU symptoms and emotional problems were significant predictors of PIU 2 years later (adjusted R 2 0.23). The stability of categorical PIU in adolescents over 2 years was less than previously reported. The present PIU symptom indications were the best forecaster of later PIU; emotional symptoms also predicted PIU over and above the influence of previous problematic Internet use. Both PIU symptoms and emotional problems may contribute to the vicious circle that supports the perpetuation of PIU.

Trumello C, Babore A, Candelori C, Morelli M, Bianchi D [53] (2018) had conducted a research study to find out the associations of relationship with parents, emotion regulation, and callous-unemotional traits with addiction of Internet in a community sample of adolescents. Participants furnished data calculates the relationship with parents, emotional parameter (perceptive reappraisal and communicative suppression), callous- unemotional traits (callousness, uncaring, and unemotional), and addiction of internet use were completed by 743 adolescents aged 10 to 21 years. The research study results described that a low professed maternal availability, high perceptive reappraisal, and high callousness appeared to be predictors of Internet addiction.

Review of literature related to relationship between internet addiction and behavioral problems
Ko C, Yen J, Liu S, Huang C, Yen C [54] (2013) conducted a study where total of 9405 adolescents were recruited into this study and completed the questionnaires. Their aggressive behaviors, Internet addiction level, Internet activities, demographic data, depression level, self-esteem, family function, and the watching of violent TV programme were measured. The research study results explained that after controlling the effects of shared measured factors and watching violent TV programs, adolescents with Internet use addiction were more likely to have aggressive behaviors during the previous year. The association was more significant among adolescents from junior high schools than from senior high/vocational schools. There were association with aggressive behaviors and online chatting, adult sex Web viewing, online gaming, online gambling, and Bulletin Board System.

Yu J, Kim H, Hay I [55] conducted a study where As Internet usage has become more prevalent among youth, so too has problematic Internet use. Despite the critical role of emotion regulation in the development of adolescents' behaviors and the role of parenting interactions on their children's behaviors, little research has examined these links with reference to problematic and addictive Internet use for adolescents. The main goal of this study was to examine these links, based on a sample of 525 high school students (368 males; M = 15.33 years, SD = 0.47) from a predominantly middle and lower-middle socioeconomic community in Seoul, Korea. Results from structural equation modelling revealed that students' difficulties in emotion regulation was a mediating variable between students' perceptions of their parents' parenting behaviors and the students' Internet

use. The findings substantiate the importance of conceptualizing addiction from a social/cognitive theoretical framework and the notion that adolescence is the onset period for many addictive behaviors and so more initiative action and attention needs to be given to reducing these early negative behaviors. Based on these results, interventions designed to enhance adolescents' emotion regulatory abilities have the likelihood to mitigate problematic and even addictive Internet use among youth.

Review of literature related to relationship between internet addiction and academic performance

Leung L, Lee P [56] (2012) conducted a study examines the interrelationships among Internet literacy, Internet addiction symptoms, Internet activities, and academic performance. Research data information were collected from a sample of 718 children and adolescents, aged 9–19, in Hong Kong , using face-to-face interviews. Research data results demonstrate that Internet addiction on adolescent were most likely tended to be male, in short-income families, and not self-reliant in locating, browsing, surfing and getting information from various resources, but somehow they were very much technologically savvy or technology friendly and regular users of social networking sites (SNS) and online games for relaxation. The conflict to what was hypothesized, Internet literacy, especially in publishing and technology, increases-not decreases-the possibility of somebody getting hooked in to the Internet. As anticipated, activities on Internet and websites, especially SNS and online games, were significantly and completely connected to Internet addiction as well as to all Internet addiction symptoms. This finding suggests that leisure-oriented Internet activities are often far more addictive than other applications like communicating by e-mail or browsing web pages. In addition, the highest number scored on each subject tool and social-structural literacy, the healthier their academic achievement would be; but, technical literacy abilities, like publishing and technology literacy, were not important forecasters for academic achievement. This indicates that adolescents who can locate, browse, and access different information resources and who are knowledgeable about the context under which the knowledge was created performed better both in overall grades and in academic competence.

Chen Y, Peng S [57] (2008) conducted a research study, to find out the relationships between university students' Internet use and their academic performance, interpersonal relationships, psycho social adjustment, and self-evaluation. The study was established on data drawn from a national survey of college students in Taiwan. A representative sample of 49,609 students (2005–2006 academic session year juniors) was randomly selected from 156 universities (174,277 students). Students completed a questionnaire online. Heavy Internet users and non-heavy Internet users differed significantly on variety of dimensions. Non heavy users had healthier relationships with administrative staff, academic grades, and learning satisfaction than heavy Internet users. Heavy users were more probability than non-heavy Internet users to be depressed, physically ill, lonely, and introverted.

Jackson L, von Eye A, Witt E, Zhao Y, Fitzgerald H [58] (2011) conducted a study where examined the effects of Internet use and videogame playing on children's academic performance. Gender, race, and income were also considered. Participated students were 482 youth, average age 12 years old. One-third participants were African American and two-thirds participants were Caucasian American. All measures were completed twice, first in Year 1, then one year later, Year 2. Results showed that more Internet use was associated with better reading skills, but only for youth initially low in reading skills. Videogame playing was connected to better visual-spatial skill but also with lower GPAs. Gender, race and income were highly influenced by the addiction on Internet use, videogame playing and academic achievement but not the relationships between using these technologies and academic achievement. Implications of the results for increasing the advantages of technology use are discussed.

Kubey R, Lavin M, Barrows J [59] (2001) conducted research study to review the relevant literature and presents data from a survey of 572 students at a large public university. Heavier entertaining Internet use was shown to be correlated highly with impaired academic performance. Loneliness, staying up late, tiredness, and missing class were also inter related with self-reports of Internet-caused impairment. Self-reported Internet addiction and impaired academic performance were both associated with maximum use of all Internet applications. Specifically with much greater use of synchronous communication applications such as chat rooms and multi user dimensions (MUDs), as opposed to asynchronous applications such as email and use net news groups.

Review of literature related to effects of Internet Use on Academic Achievement and Behavioral Adjustment

Kim S [60] (2011) conducted a research study to find out the interrelationships among adolescent Internet use, parent-adolescent relationships, and academic/ behavioural adjustment in South Korean families. Despite of the

significant numbers of Korean adolescents who use the web (98.7% of Korean children between the ages of 6 and 19 years were Internet user) for education, social, and recreational purposes, a small amount is known about how adolescent Internet use impacts family interactions and youth outcomes. Most research studies on this subject have been descriptive and have provided inconsistent findings. To find out the impact of adolescent Internet use on youth outcomes in Korea, six hundred and nine adolescents (10th and 11th graders) and their parents were recruited from five high schools in Seoul, Korea. Compared to the general population in Korea, parents within this study were more educated and from higher socio-economic status backgrounds. Findings were indicating that Korean boys and girls differed in the ways that they were using the Internet. Girls were more likely to use the Internet to observe online education classes and blog more frequently and longer than boys, whereas boys were more likely to use the Internet for playing Internet games than girls. Results were indicating that the Internet use for educational purposes was associated with adolescent academic achievement. Social and recreational based Internet usage was associated with lower academic achievement. The pathways did not vary for boys and girls. The relationships between parents and child (closeness and conflict) were found to be vital to youth adjustment and played a big role within the association between adolescent Internet use and academic and behavioural outcomes. Future research studies should investigate how Koreans deal with the influx of this rapidly developing technology and its impact of family relationships. In addition, parenting programs should incorporate with strategies about how the Internet can be used as an educational tool for the benefit adolescents.

Kodavanji B, Chathoth V, Kumar N, N A, Kini R, Pai S [61] (2014) noted and reviewed that excessive internet use was evolving as a major negative consequence in adolescent and youth and they were at most risk in terms of mounting problematic internet use the internet addiction was associated with the academic performance, dullness, the lack of time and pursuing hobbies. Among the other students group, medical students appeared to be a group of specific concern because they spent more time on the internet. The study also confirmed a strong association between the number of hours using internet every day and the harmful affect score. Frequent use of the internet and spending a significant volume of time online might be a medium of lowering the anxiety that personifies withdrawal.

The study of Govindappa L, Kasi S, Henry G [62] (2013) concludes that popularity of internet has been growing among Indian adolescents and it has become a significance tool for their social and academic development. They argued that exponential increase in the use of the internet has leading them to internet addiction. The study was mainly focused on to assess the risky behaviours of the adolescents. The results show that the students of 15-year spent 34 hours in a week on internet for various objectives. It shows adolescent have become addicts of internet use.

Thanuskodi S [63] (2013) found that internet were used by boys and girls to some extent. Both boys and girls had equal amount of access to internet but there was a difference in usage pattern. The access is similar in boys and girls because both had high exposure to the internet because of their educational experience. The boys and girls used internet in different ways at their home because girls were not given same freedom as given to boys by their parents. The researcher also noted that most of the male students (37%) used internet for less than two hours while most of the female students (31%) had less than two hours of access to the internet.

Hossain A [64] (2018) conducted a study where findings of the present study revealed that there is a significant effect of internet addiction on social adjustment. Results further indicated that the participated students who were within the severe and profound groups of internet addiction were found to possess determined effect instead of the students who were indicated to the internet usage moderately. It can also be inferred from the results that female students have low Internet addiction level than male students, so care should be taken more for male students than female students in the west Bengal.

Balhara Y, Mahapatra A, Sharma P, Bhargava R [65] (2015) reported that the students who were in the severe and profound groups of internet addiction were found to have detrimental effects on both in their academic performance and psychological state instead of the students who were hooked in to the web usage moderately.

Literature Review related to association between internet addiction and socio demographic variable
Masare M, Bansode-Gokhe S, Bansode-Gokhe S, Shinde R, Shinde R [66] (2017) conducted a cross sectional observational study on 304 secondary school children studying in 8th and 9th standard, regarding the socio-demographic profile and Strength and difficulties questionnaire. The analysis was done using Microsoft Excel and SPSS software. Results: In this study, the prevalence of abnormal behavioural according to self-rated SDQ was found to be 1.6% while prevalence of borderline abnormal behaviour was 11.2% and majority 87.2% of

study subjects were normal having no behavioural problem. The combination of abnormal and borderline behavioural problems were more prevalent in the age group between 12-13 years (64.1%) and between 13-14 years (30.8%), also more prevalent among girls (69.2%) compared to boys (30.8%). The prevalence of behavioural problems was higher among students studying in 9th standard (74.4%, 29/39) and studying in Hindi medium (61.5%). The incidence was found to be more in students who belongs to nuclear families (79.5%) and also was more among those who were first born compared to middle born and last born children. According to study, majority of fathers were working as semi-trained (41.4%) and trained (32.9%) labours, among the father's alcohol users (45.06%) were high compared to the tobacco users (31.9%).

In conclusions, the Socio-demographic factors and occupation of father and alcohol consumption among them was found to be significantly related to the behavioural problems of the study subjects.

III. RESEARCH METHODOLOGY

This chapter was planned to have a brief description of the strategies used for collection of data. Methodology included research approach, research design, variables under study, the setting, the population, the sample and sampling technique, data collection tools and techniques and plan for data analysis.

Research approach

For the present study the survey approach was adopted. This method was selected because, here no treatment or intervention was given by the researcher. Only researcher collected information from different subject within a given population regarding addiction on digital medias, behavioral problems and academic achievement of the students. The research approach was non experimental.

Research design

Research designs are plans and processes for research that span the selection from broad assumptions to detailed methods of collection of data and analysis. In this present study, Descriptive Research Design was selected. The objective of this study was to assess the addiction on digital medias, behavioral problems and academic achievement of the students. Therefore, this design was thought to be most appropriate to accomplish the objectives
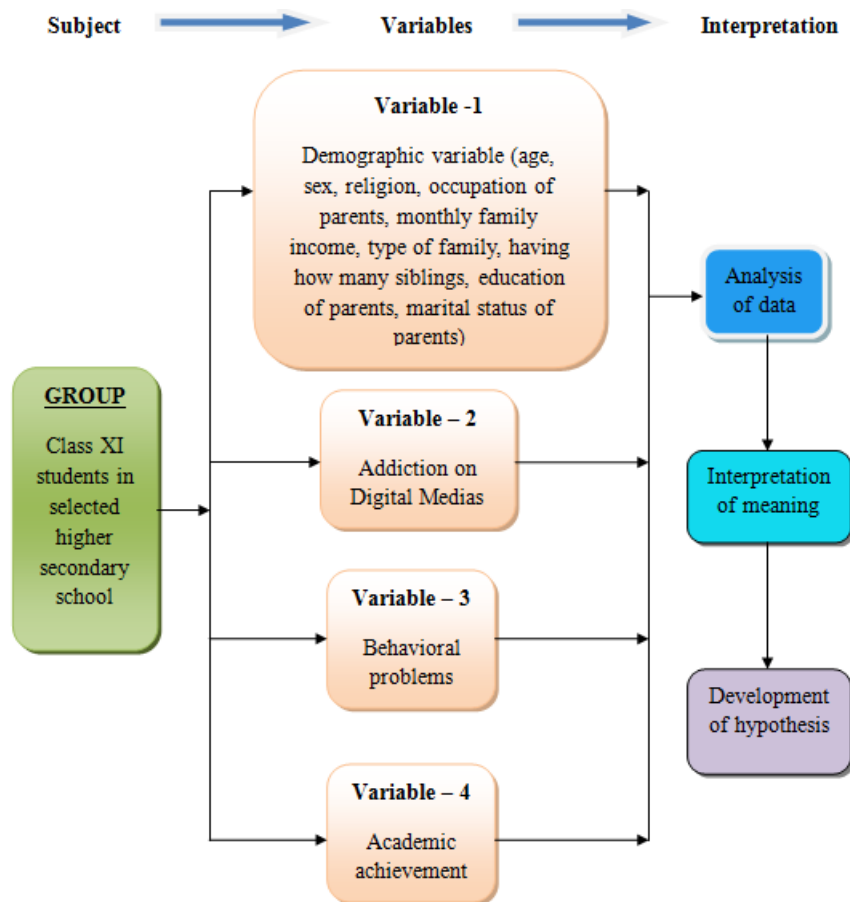

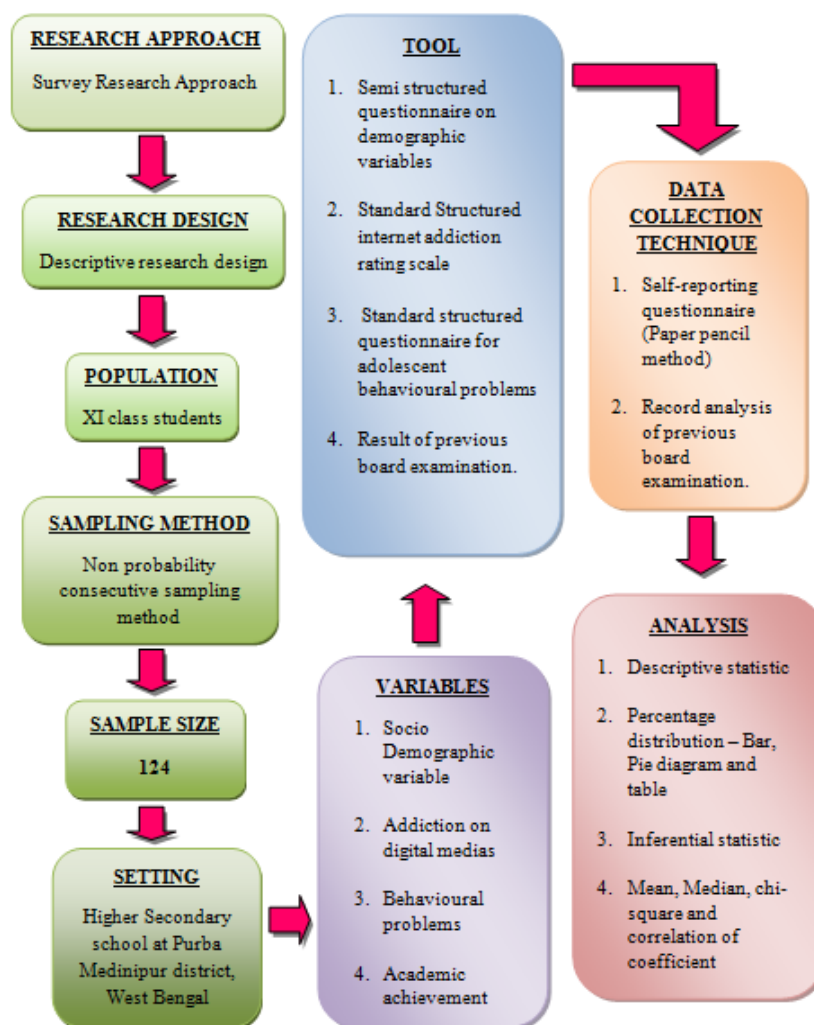Figure 2: Schematic representation of Research Design

Figure 3: Schematic representation of Research Methodology

Variable
Variables are defined as an attribute of an object of study , qualities, things or situations that change or vary. The study variables are
   Selected Socio demographic variables
- Age
- Sex
- Father's education
- Mother's education
- Occupation of father
- Occupation of mother
- Monthly family income
- Type of family
- No. of siblings
- Marital status of parents
- Duration of internet use

Research Variables
- Addiction on digital medias
- Behavior problems
- Academic achievement

Setting of the study
The study was conducted at
1.   Pilot Study - Demari High School, Purba Medinipur
2.   Final Study - Tamluk High School, Purba Medinipur

Rational for setting this school

I. Familiarity with the settings
II. Easy accessibility of the subject
III. Availability of the subject
IV. Feasibility of conducting the study
V. Administrative approval and expectation of cooperation for the study from various personnel

Population of the study

Population is the accumulation of all the units in which a researcher is interested. Population is the set of people or entities to which the result of a research is to be generalized. Population for this study was all the school students studying in class XI.

Sample

Sample consists of a subset of unit which comprises the population selected by the investigator to participate in their research project. Sample for this study was total enumeration of class XI male and female students of arts and science streams of selected higher secondary school during data collection period.

Sample size

In this present study sample size was 124 students.

Sampling technique

Sampling is the process of selecting a part of the assigned population to represent the entire population. Sampling process entails the formulation of specific criteria for selection, which ensures that the characteristics of phenomenon of interest will be present in all the units being studied. In this present study, non-probability consecutive sampling technique was used to select the subject for this study because here samples were chosen from the selected school of West Bengal who were willingly participated in the study and fulfilled the predetermined Sampling criteria.

Criteria for sample selection
Inclusion criteria

- XI class school students of arts and science streams who were present and available at the time of study period.
- Students who were willing to participate in this research study.
- Sample selection was done from male and female school students

Exclusion criteria

- Students who were not willing to participate in the research study
- Students who were absent at the time of study period.

Data collection tools and techniques

Data collection means the precise, systematic gathering of information relevant to the study and in-relation to specific objective of the study. The following data collection tools are constructed and permission for using the tool was taken from respective authority in order to obtain data.

Table 1 Schematic presentation of data collection tool and technique

Variables	Tool	Technique
1. Socio-demographic variable	Tool 1 Semi Structured questionnaire schedule	Questioning (self-report) Paper pencil test
2. Addiction on digital medias	Tool 2 Standard Structured internet addiction test rating scale	Questioning (self-report) Paper pencil test
3. Behavioural problems	Tool 3 Standard Structured questionnaire schedule	Questioning (self-report) Paper pencil test
4. Academic achievement	Result of previous board examination	Record analysis of previous board examination

Development and description of the tools
Development of tool
   For development of tool the following steps had been taken
- A comprehensive review of research and non-research literature.
- Guidance of experts.
- Professional experience in the clinical field.
- Peer group discussion
- Development of first draft of the tool with the help of guide.
- Establishment of content validity and some modification have been made and some of items are
- Included according to suggestion of experts.
- Pre testing of the tool
- Reliability of the tool computed
- Development of final draft of the tool

Description of the tool
The data collection tool was developed as Tool – I, Tool -II, Tool - III

Tool – I: Development and description of semi structured questionnaire to collect Socio demographic data
A semi structured questionnaire is developed to collect necessary information. A review of research and non-research material was done, opinion of experts were sought to ascertain the clarity and appropriateness of this item .The tool consisted of items with regard to as of the student, age, sex, types of family, family income per month, father's education, mother's education, occupation of father, occupation of mother, having how many siblings, time period of using internet.
Pre testing was done to check the clarity and feasibility of the tool and it was found that there was no difficulty in conducting the data collection.

Tool – II: Internet Addiction Test (IAT) 6 point rating scale (By Dr. Kimberly Young)
It comprised of rating scale for assessing the internet addiction of school students. The content of the schedule was selected and organized by review of literature consulting the experts. Internet problematic use scale which is proposed by Young is a self-report questionnaire containing 20 items. The items on the instrument are scored on a 6-point severity scale with a score of one denoting rare problematic use at one extreme and five denoting 'always' a problematic use while 0 denotes 'does not apply' to the individual question. The total global scores range from 0 to100.The rating scale consisted of 20 items on internet addiction test
The tool is in the form of a six point rating scale with
- Does not apply (rating scale 0)
- Rarely (rating scale 1)
- Occasionally (rating scale 2)
- Frequently (rating scale 3)
- Often (rating scale 4)
- Always (rating scale 5)

The internet addiction test scale has a maximum score 100
- No internet addiction (score 0 - 20)
- Mild internet addiction (score 20 – 49)
- Moderate internet addiction (score 50 – 79)
- Severe internet addiction (score 80 – 100)

Tool – III: Standard structured Questionnaire for adolescent Behaviour problem. (Strengths and difficulties Questionnaire)
This tool comprises following items
1. Total difficulties score (score 0-40)
  i.   Emotional Symptoms scale (score 0-10)
 ii.   Conduct problem scale (score 0-10)
iii.   Hyperactivity Scale (score 0-10)
iv.   Peer problem Scale (score 0-10)
  2. Prosocial Scale (score 0-10)
  3. SDQ impact scale (score 0-10)
  i.   Difficulties upset or distress child (score 0-2)

ii.   Interfere with home life (score 0-2)
iii.   Interfere with friendship (score 0-2)
iv.   Interfere with classroom learning (score 0-2)
v.   Interfere with leisure activities (score 0-2)
So total score is (0-60) [Total difficulties score + Prosocial Scale + SDQ impact scale]

Content validity
After preparing the tool it was given to nine experts along with criteria checklist to ensure content validity. The experts were from the 'Department of psychiatry', 'Departments of clinical Psychology', 'Department of psychiatry nursing speciality', 'Department of Statistics'

Pretesting of the tool
Pretesting of the tool was done by administering the tool on five school students to test it clarity, ambiguity and time required for competing the data collection. The subject's characteristics were similar like final study subjects. All items were well understood by the school students and average time taken 20-30 minutes.

Reliability of the tool
The reliability of the tool is computed by
- Inter-rater method for Socio demographic tool, (Tool-I)
- Cronbach's alpha method for Internet addiction test tool, (Tool-II)
- Cronbach's alpha method for adolescent behaviour problem, (Tool-III)

The reliability of the tool was found to be 0.99 for Socio demographic Tool-I, 0.84 for Tool-II and 0.93 for Tool-III respectively. So, the tool was considered as reliable.

Development of final draft of the tool
Final draft of the tool was developed on the basis of expert's suggestion, guidance, opinion and extensive view of literature. Some modification was made according to their suggestions. Then the final draft of tool was prepared.

Ethical consideration
- Permission was taken from 'Institutional ethics Committee IPGME&R Research Oversight Committee, SSKM Hospital'
- Permission taken from Directorate of Health Services, Swasthya Bhawan
- Permission taken from Head Master of Tamluk High School.
- Permission taken from Head Master of Demari High School
- The purpose of the study explained to each student separately and the students were assured about the confidentiality of their responses.
- The informed consent taken from the student for their willingness to take the part in the study.
- Privacy were maintained during data collection
- Data was collected according to the suitability. Researcher collected the data by self.
- The information given by the subjects was kept confidential and used only for the purpose of the study and anonymity was maintained throughout the study.

Pilot study
Pilot study was conducted at 'Demari High School' from 13.11.19 to 19.11.19 after getting necessary formal administrative permission. The objective of the pilot study was to assess the feasibility and practicability of conducting the study and also to assess the availability of study subjects. Sample size was 20. Sample was selected as per sampling criteria through non probability consecutive sampling technique. Self-introduction was given to the subject and explains of them the purpose of the study. Addressed the terms of confidentiality and informed written consent was taken from the respondent's parents before the application of questionnaire statistical analysis of data has to be established. Data was tabulated, analyzed and statistically calculated with the help of descriptive and inferential statistics.

Procedure for final data collection
Formal administrative permission was taken for the Pilot and Final study from the 'Director of Medical Education West Bengal', The Headmaster of 'Demari High School' and 'Tamluk High School'.

After obtaining final administrative permission the final data was collected from 02.01.2020 to 14.01.2020 at 'Tamluk High School'.

During data collection period the data was collected in the following way

- On the schedule day the only those students were taken as sample who were interested to participate in study at school.
- The respective teacher was introducing the investigator to the students.
- Self-introduction was given to the subject and explains the purpose of the study to the subject.
- Addressed terms of confidentiality and informed written consent were taken from the parents of the student.
- The questionnaire was distributed in the classroom settings.
- Socio demographic questionnaire was given firstly and collected the papers as when they completed. Internet addiction test tool questionnaire was given and collected the papers as when they completed. The third part of the tool for adolescent behaviour problem was given and collected the papers after completion.
- Results of the last board examination (Madhyamik Pariksha) of the participant students were collected from the office of school for analysis and assessment of academic achievement.
- The data collection process was terminated after thanking each respondent and the administration of the concerned school for the kind participation and cooperation.

Plan for data analysis
Data were planned to be analyzed by using both descriptive and inferential statistics methods.
Frequency and percentage was computed for describing the sample.
- Finding related to socio demographic characteristics of the subject.
- Finding related to addiction on digital medias.
- Findings related to behaviour problems of the student.
- Findings related to academic performance of the student.
- Correlation of Co efficient was computed for relationship between addiction on digital medias, behaviour problems and academic performance of the students.
- Chi-square was computed for association between addiction on digital medias and selected socio demographic variables i.e. age, sex, monthly income of family, number of siblings, type of family, father's education, mother's education, father's occupation, mother's occupation, duration of using internet.

Summary
This chapter on methodology dealt with research approach, research design, variables, setting of the study, population, sample and sampling technique, development and description of tools, content validity, try out, reliability, pilot study, data collection procedure and plan for data analysis.

IV.   ANALYSIS AND INTERPRETATION OF DATA

The chapter deals with the analysis and interpretation of the data collected during the study to assess the addiction on digital medias, behavioral problems and academic achievement of the students.
Analysis is the process of organising and synthesizing the data so as to answer research question and test hypothesis. The purpose of analysing the data collected in the study is to describe the data in meaningful terms. The data used is to be systematically analysed so that trends and patterns of relationship can be detected. Analysis reduces the data to an intelligible and interpretable form so that the relation of research problem can be studied and tested. Interpretation refers to the process of making sense of the result and of examining the implication of findings within a broader content. In this present study, Analysis and interpretation of data are based on data collected through semi structured questionnaire, standard structured rating scale and standard structured questionnaire schedule and result of previous board examination.

Objectives of the study
  i.   To identify the addiction on digital medias among the school going students.
 ii.   To identify the behavioral problems among the school going students.
iii.   To determine relationship between the addiction on digital medias and the levels of the behavioral problems among the school going students.
iv.   To determine relationship between the addiction on digital medias and the academic achievement among the school going students.
  v.   To find the association between the addiction on digital medias and the selected demographic variables.

Organization and presentation of final study findings
The obtained data were tabulated, analyzed and interpreted by using descriptive and inferential statistics. The findings of the study have been organized, presented in following section.

1. **Section I:** Findings related to socio demographic characteristics of students.
● **Section II:** Findings related to addiction on digital medias of the students.
● **Section III:** Findings related to behavioral problems of the students.
● **Section IV:** Findings related to academic achievement of the students.
● **Section V:** Findings related to correlation coefficient between addiction on digital medias, behavioral problems and academic achievement of the students.
● **Section VI:** Findings related to association between addiction on digital medias and selected demographic variables i.e. age, sex, monthly income of family, number of siblings, type of family, father's education, mother's education, father's occupation, mother's occupation, duration of using internet.

Section I
Findings related to socio demographic characteristics of students.

This section describes the findings related to socio demographic variables of students in terms of age, sex, monthly family income, no. of siblings, type of family, father's education, mother's education, father's occupation, mother's occupations, parent's marital status, and duration of using internet.
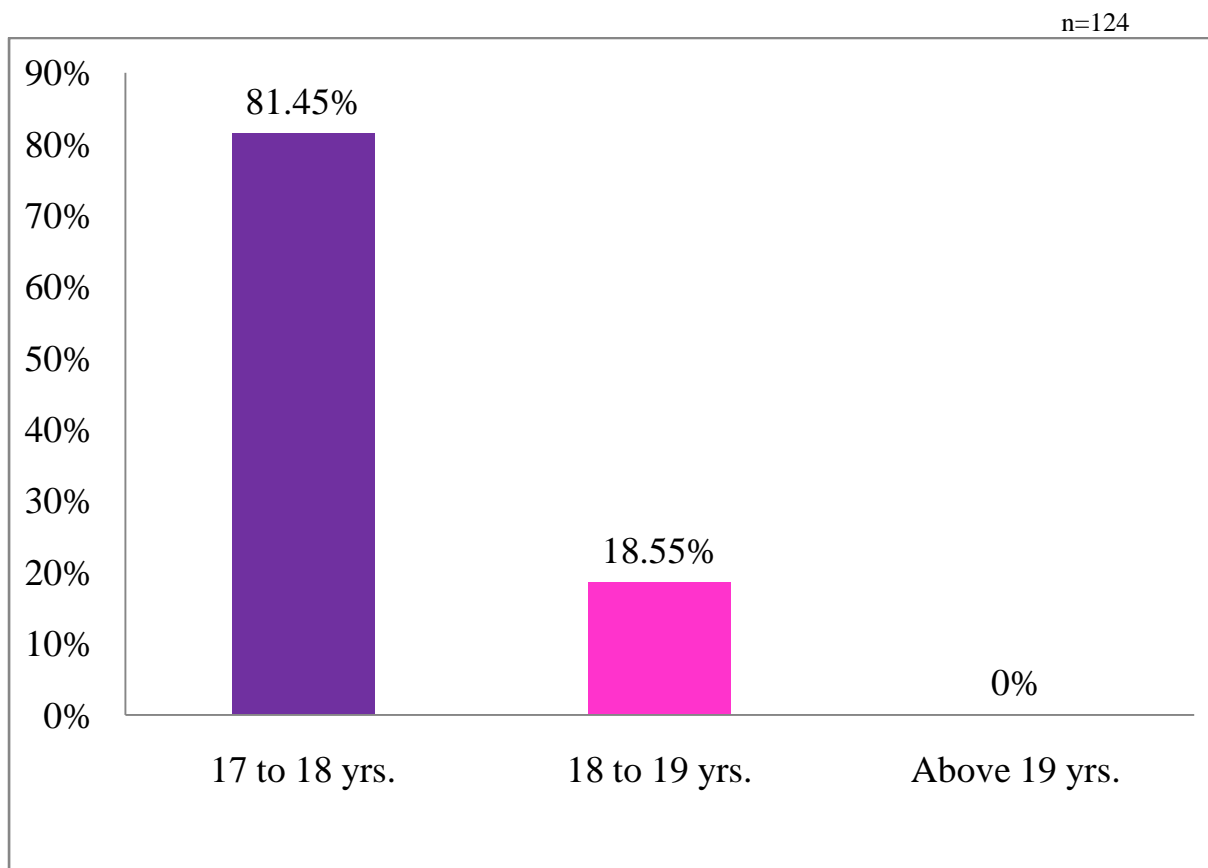

Figure 4: Bar diagram showing the percentage distribution of students in terms of age in years.

Data presented in figure 4 shows that majority of the students (81.45%) were 17 yrs to 18 yrs old and 18.55% of the students were 18 yrs to 19 yrs old and there was no student above 19 years old.
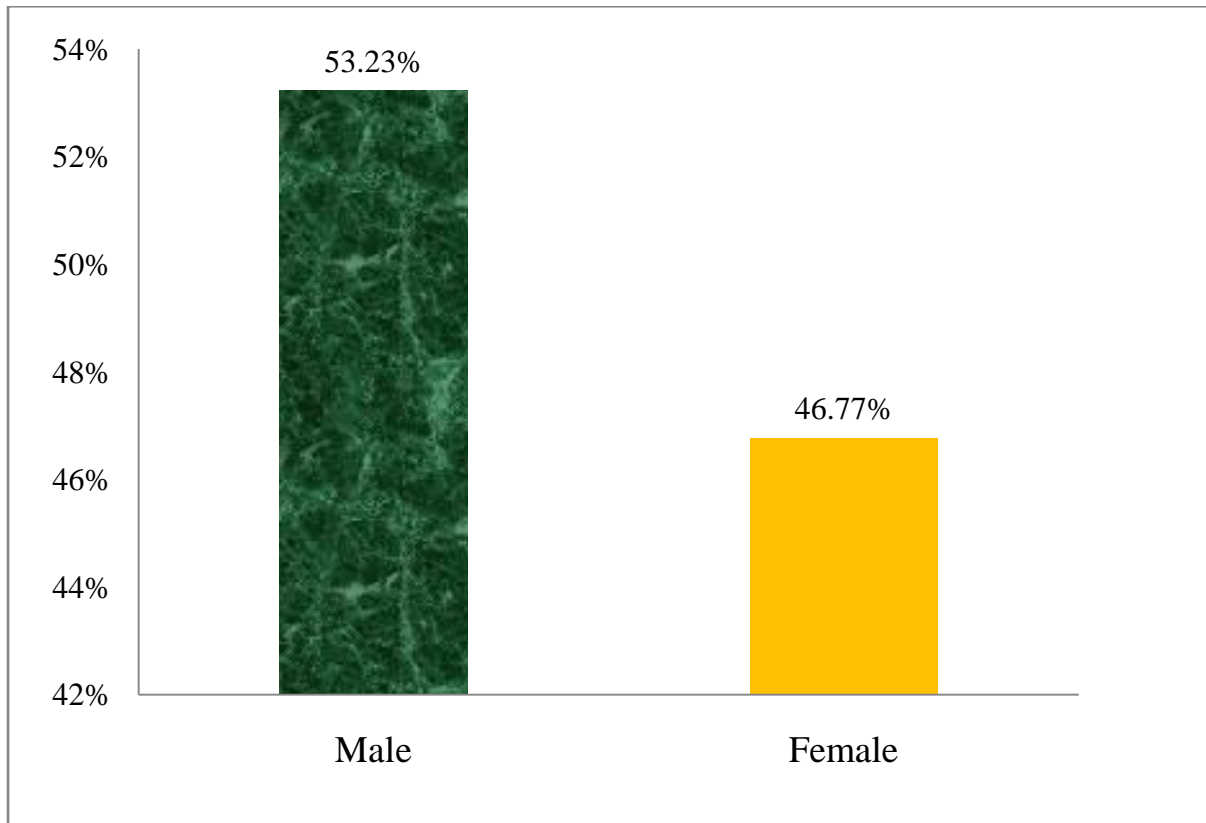
n=124

Figure 5: Bar diagram showing the percentage distribution of students according to their sex.

Data presented in figure 5 shows that 53.23% students were male and 46.77% students were female.
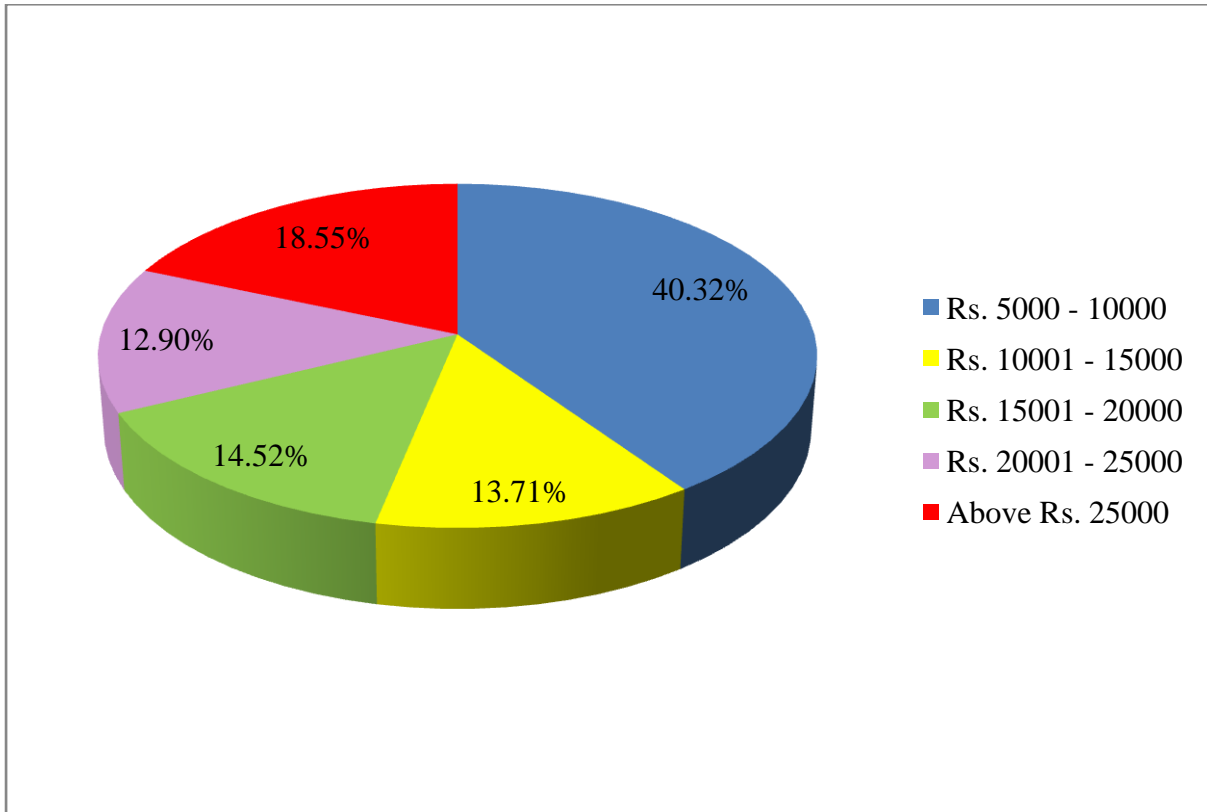
n=124

Figure 6: Pie diagram showing the percentage distribution of students according to monthly income of the family

Data presented in figure 6 shows that 40.32% of family having monthly income Rs.5000-10000, 18.55% of family having monthly income above Rs.-25000, 14.52% of family having monthly income Rs.15001-20000, 13.71% of family having monthly income Rs.10001-15000 and 12.90% of family having monthly income Rs.20001-25000.
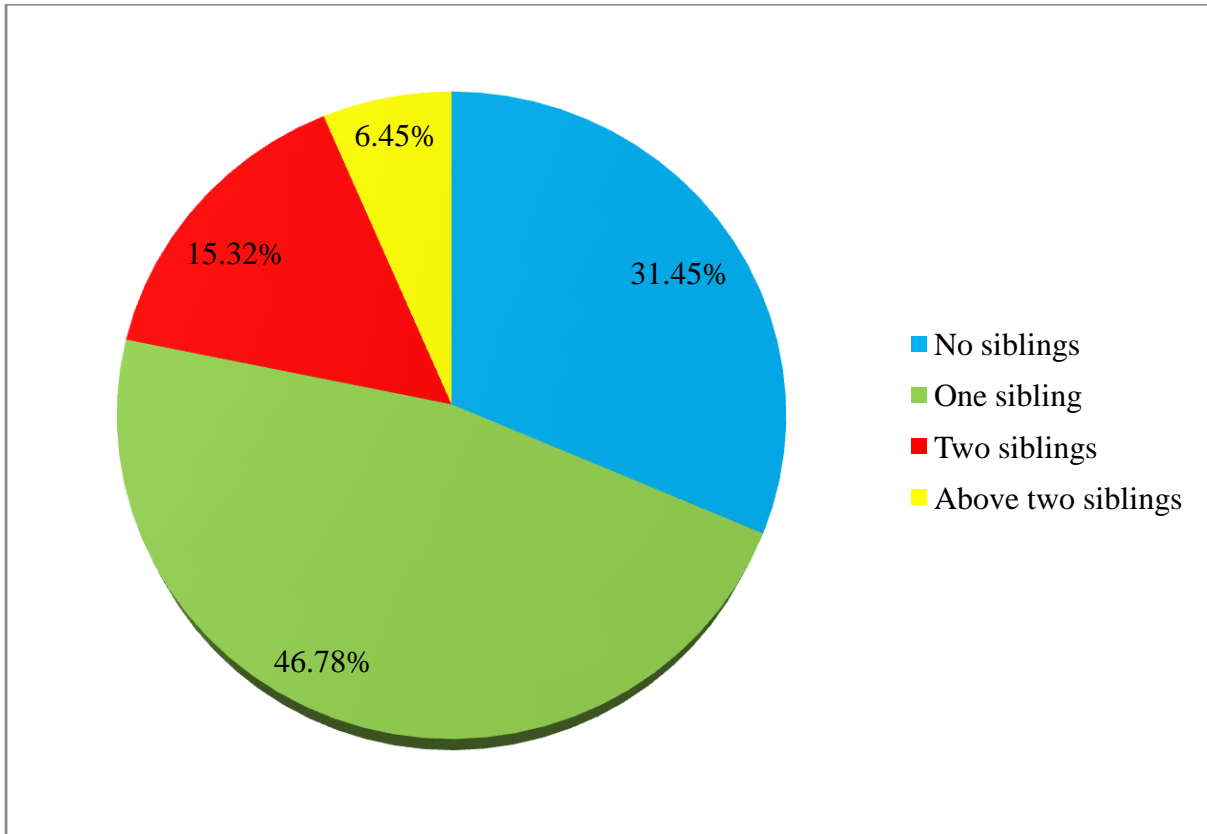
n=124

Figure 7: Pie diagram showing the percentage distribution of students according to number of sibling

Data presented in figure 7 shows that 46.78% were having one sibling, 31.45% were having no sibling, 15.32% were having two siblings and 6.45% were having above two siblings.
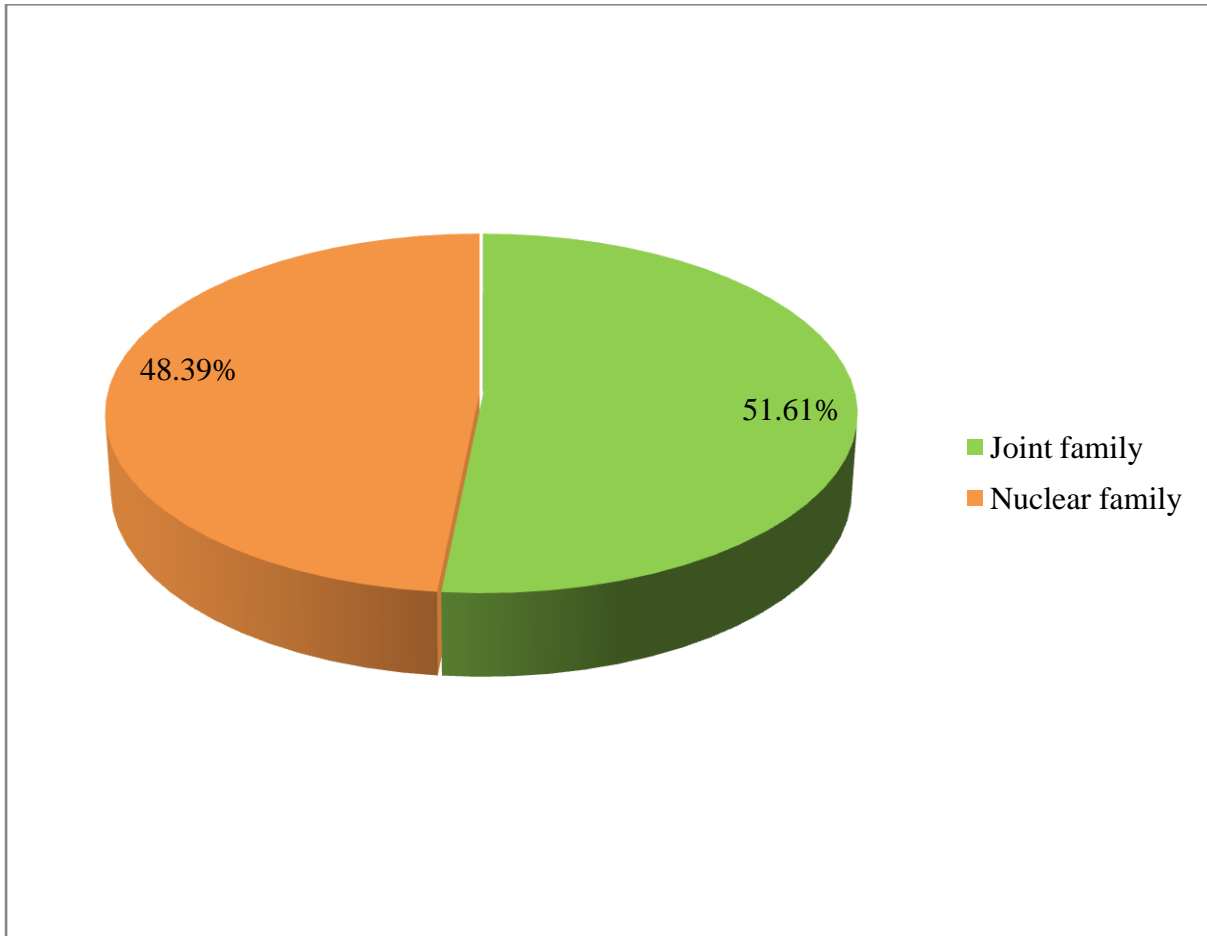
n=124

Figure 8: Pie diagram showing the percentage distribution of students according to type of family

Data presented in figure 8 shows that 51.61% were belonging to joint family and 48.39% were belonging to nuclear family.

n=124

Figure 9: Bar diagram showing the percentage distribution of students according to education of father

Data presented in figure 9 shows that 29.84% father of student were under secondary education, 25.81% father of student were graduate and above, 23.39% father of student were under higher secondary education, 20.16% father of student were under primary school education and 0.8% father of student were illiterate.

n=124

Figure 10: Bar diagram showing the percentage distribution of students according to education of mother

Data presented in figure 10 shows that 34.68% of the student's mother were under secondary education, 26.61% of the student's mother were under primary school education, 18.55% of the student's mother were under higher secondary education, 17.74% mother of the student were graduate and above and 2.42% of the student's mother were illiterate.
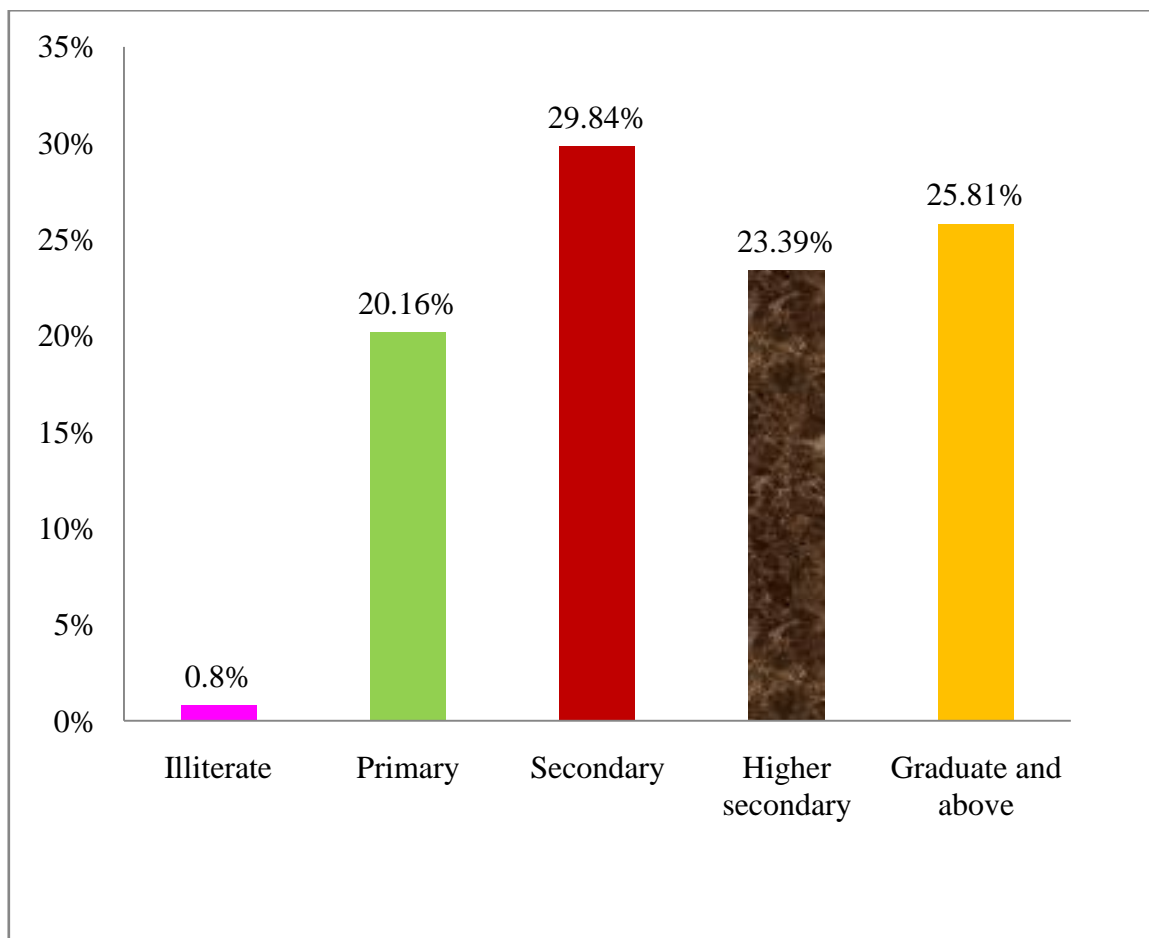
n=124
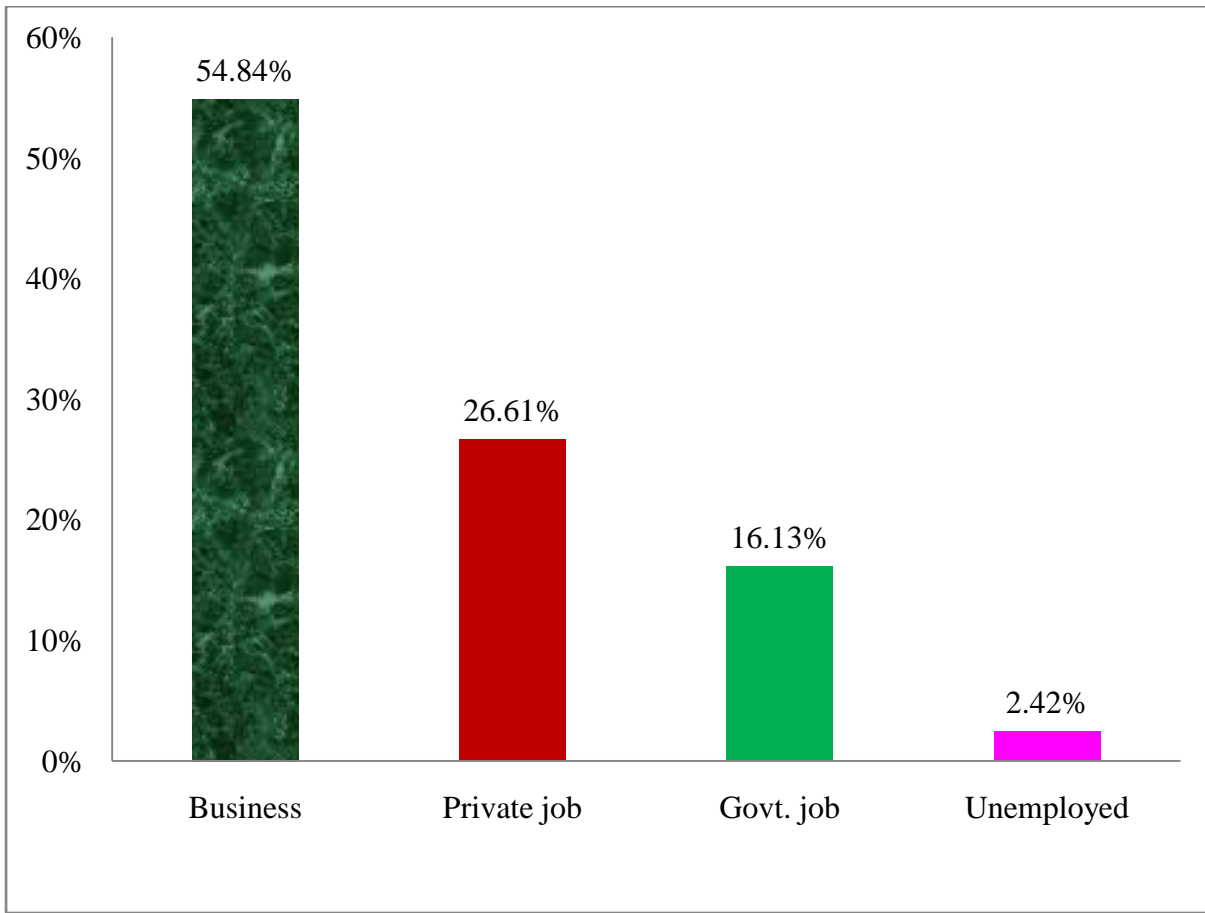
Figure 11: Bar diagram showing the percentage distribution of students according to occupation of father

Data presented in figure 11 shows that 54.84% of student's fathers were having business, 26.61% of student's fathers were having private job, 16.13% of student's fathers were having govt. job and 2.42% of student's fathers were unemployed.
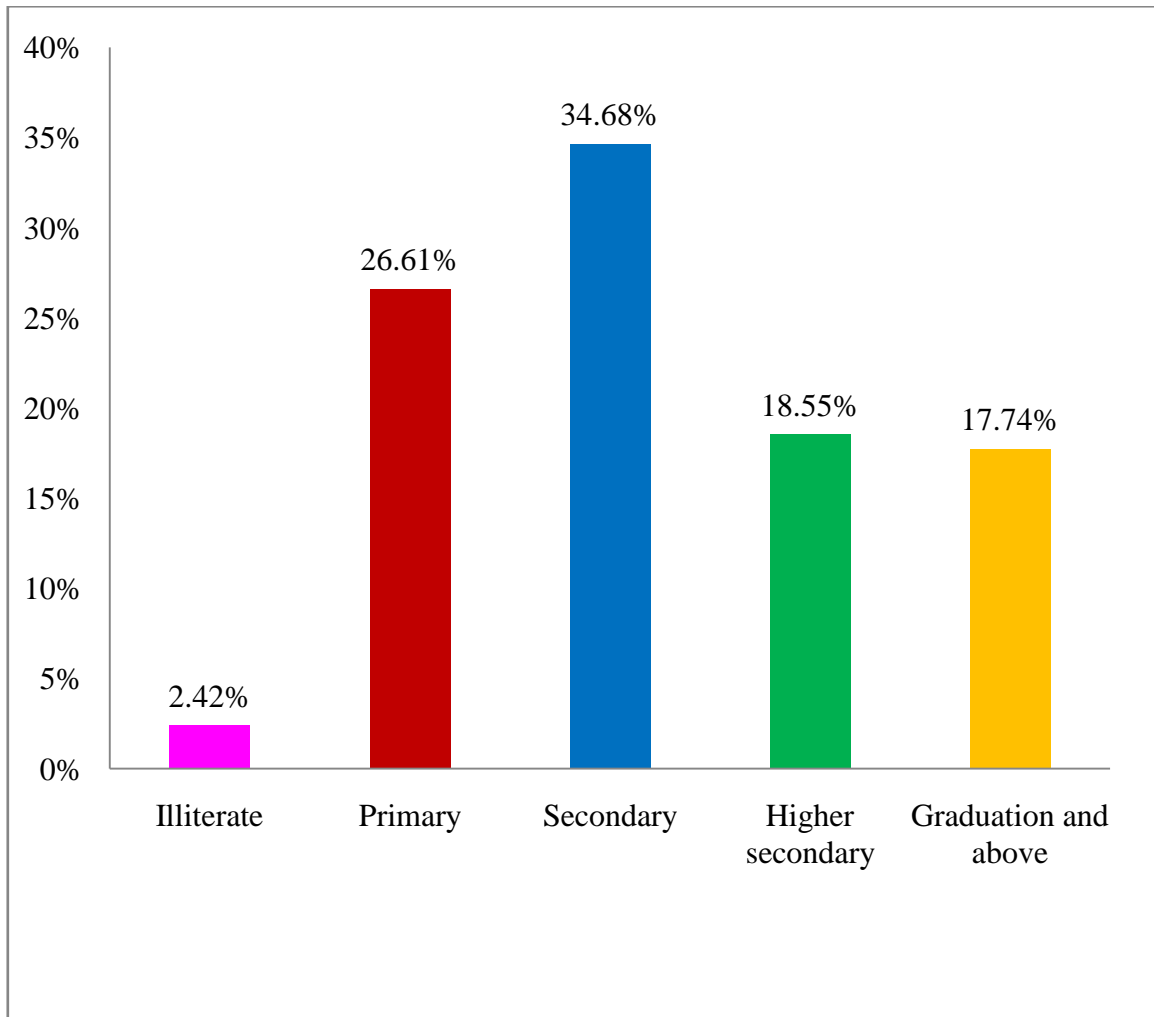
n=124
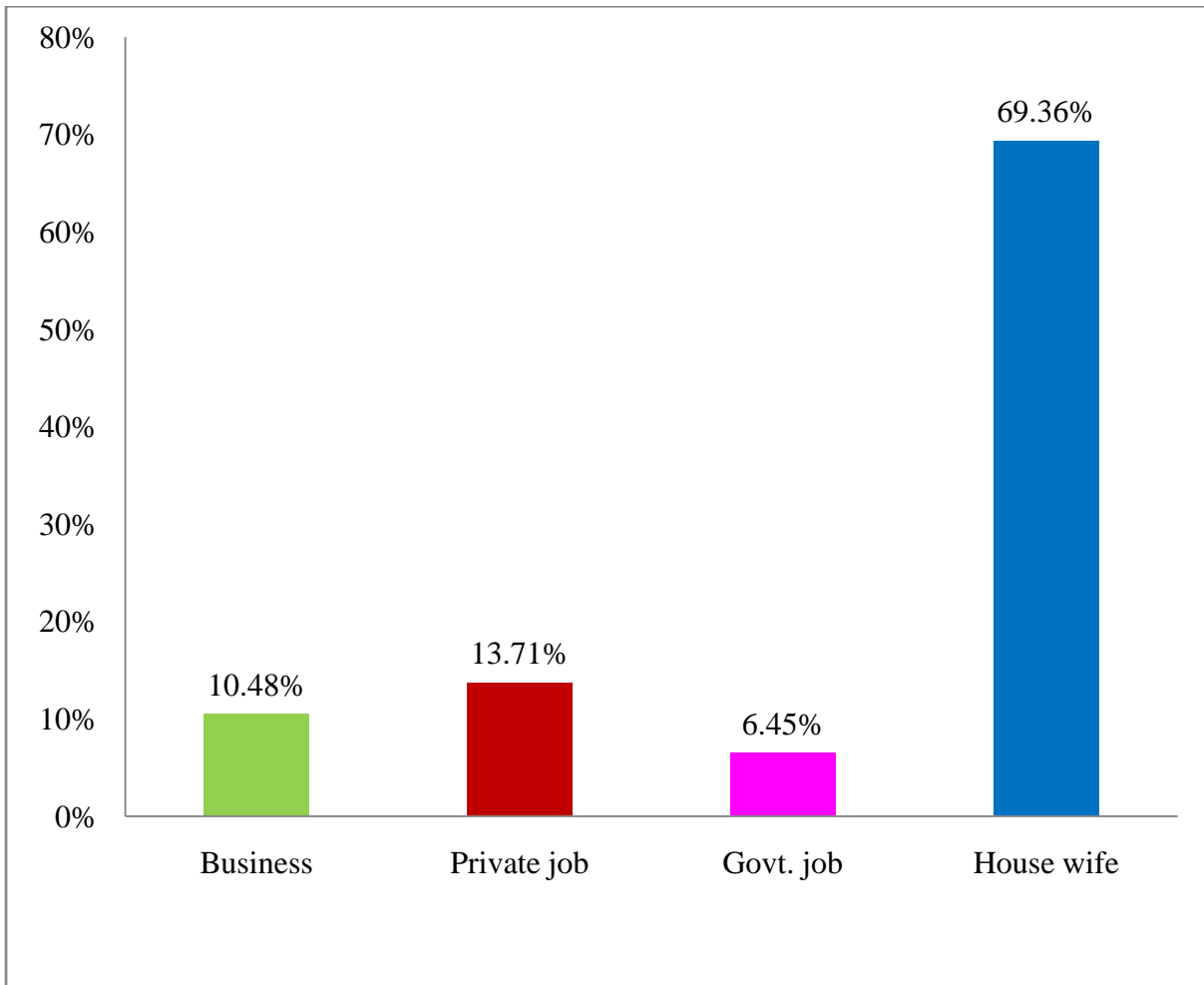
Figure 12: Bar diagram showing the percentage distribution of students according to occupation of mother

Data presented in figure 12 shows that 69.36% of student's mothers were housewife, 13.71% of student's mothers were in private job, 10.48% of student's mothers were doing business and 6.45% of student's mothers were in government job.

n=124
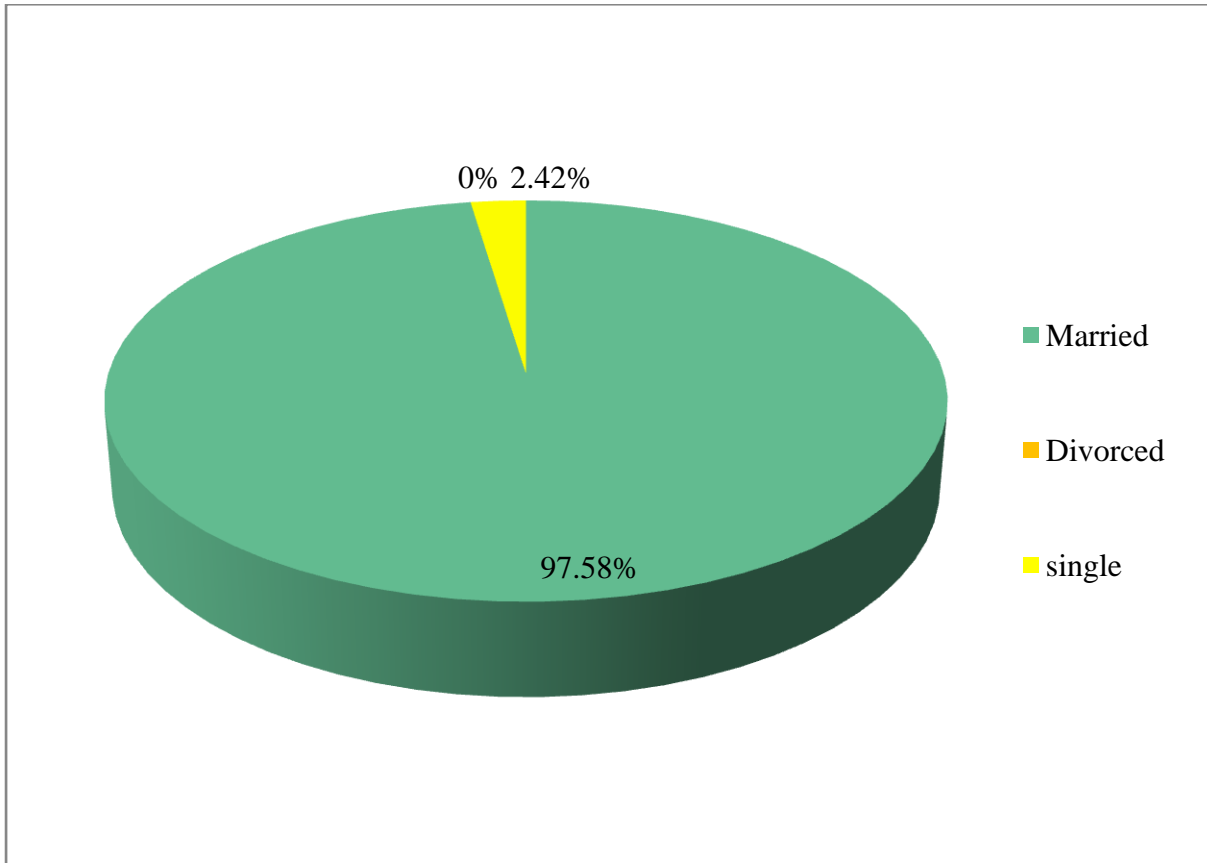
Figure 13: Pie diagram showing the percentage distribution of students according to parent's marital status

Data presented in figure 13 shows that majority of the student's parents (97.58%) were married and 2.42% of the student's parents were single parents and there was no divorced parents of the student.

n=124

Figure 14: Bar diagram showing the percentage distribution of students according to duration of using internet

Data presented in figure 14 shows that 27.42% students were using internet since 2 year, 21.77% students were using internet since 7 months to 1 year, 20.97% students were using internet since above 3 years, 20.16% students were using internet since 1 month to 6 months and 9.68% students were using internet since 3 years.

Section II
Findings related to addiction on digital medias of the students.

Table 2 Frequency and percentage distribution of the students according to degree of addiction on digital medias.

n=124

Data presented in the table 2 shows that majority of the students (60.48%) had mild addiction on digital medias and 2.42% of the students had severe addiction on digital medias.

Addiction on digital medias	Frequency (f)	Percentage (%)
Mild addiction	75	60.48%
Moderate addiction	42	33.87%
Severe addiction	03	2.42%
No addiction	04	3.23%

Section III
Findings related to behavioral problems of the students.

n=124
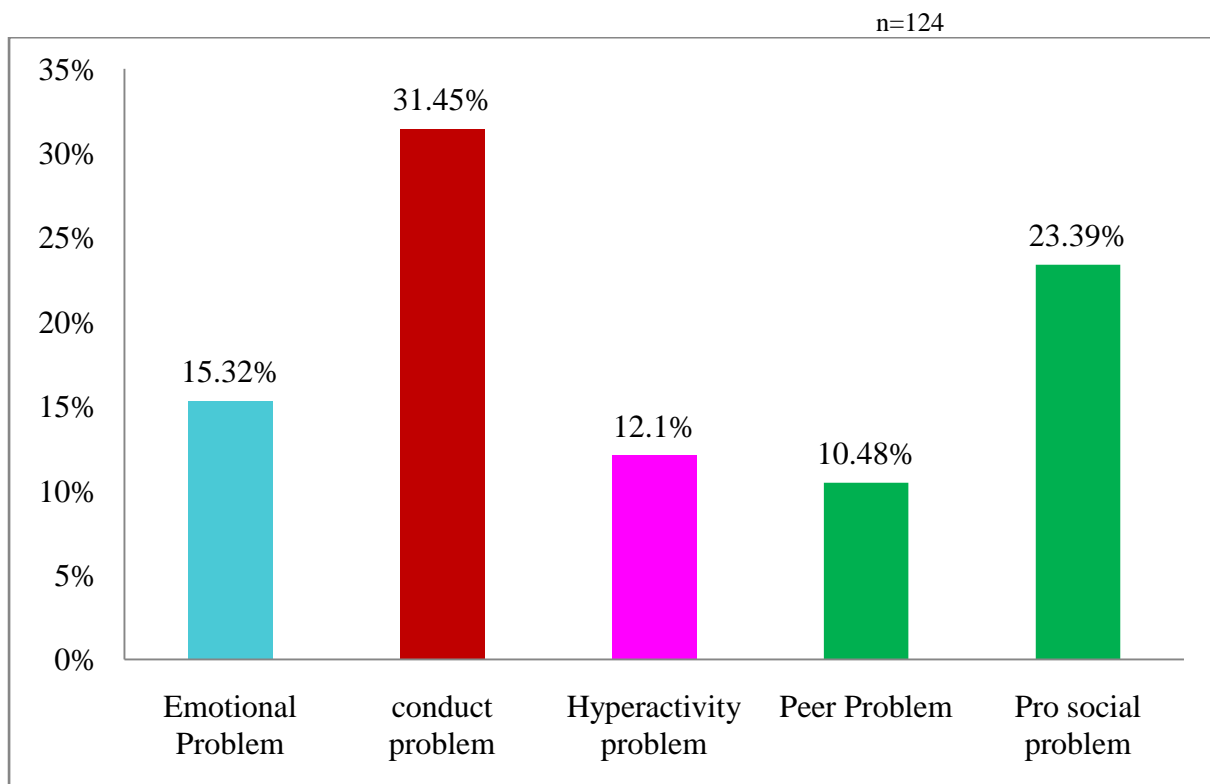
Figure 15: Bar diagram showing the percentage distribution of students according to abnormal behavioral problems of the students.

Data presented in figure 15 shows that majority of the students (31.45%) had abnormal conduct problem and 10.48% of the student had abnormal peer problem.

Behaviour Problem Scale	Problems Score	No. of study subjects	
		Frequency (n)	Percentage (%)
Emotional symptoms	Normal 0-5	83	66.94
	Borderline 6	21	16.94
	Abnormal 7-10	19	15.32
Conduct problems	Normal 0-3	68	54.84
	Borderline 4	9	7.25
	Abnormal 5-10	39	31.45
Hyperactivity symptoms	Normal 0-5	90	72.58
	Borderline 6	16	12.9
	Abnormal 7-10	15	12.1
Peer problem	Normal 0-3	62	50
	Borderline 4-5	38	30.65
	Abnormal 6-10	13	10.48
Pro-social behaviour	Normal 10-6	74	59.68
	Borderline 5	21	16.94
	Abnormal 4-0	29	23.39
Total difficulties	Normal 0-15	70	56.45
	Borderline 16-19	28	22.58
	Abnormal 20-40	26	20.96

Table 3 Frequency and percentage distribution of behavioral problems score of the students.

n=124

Data presented in the table 3 shows that majority of the students 66.94% had normal level of emotional problem and 15.32% had abnormal emotional problem, majority of the students 54.84% had normal level of conduct disorder and 7.25% had borderline conduct disorder, majority of the students 72.58% had normal level of hyperactivity problem and 12.1% had abnormal hyperactivity problem, majority of the students 50% had normal level of peer problem and 10.48% had abnormal peer problem and majority of the students 59.68% had normal level of prosocial behavior problem and 16.94.48% had borderline problem. Less 20.96% student had total difficulties and 56.45% students behaved normally.

Section IV
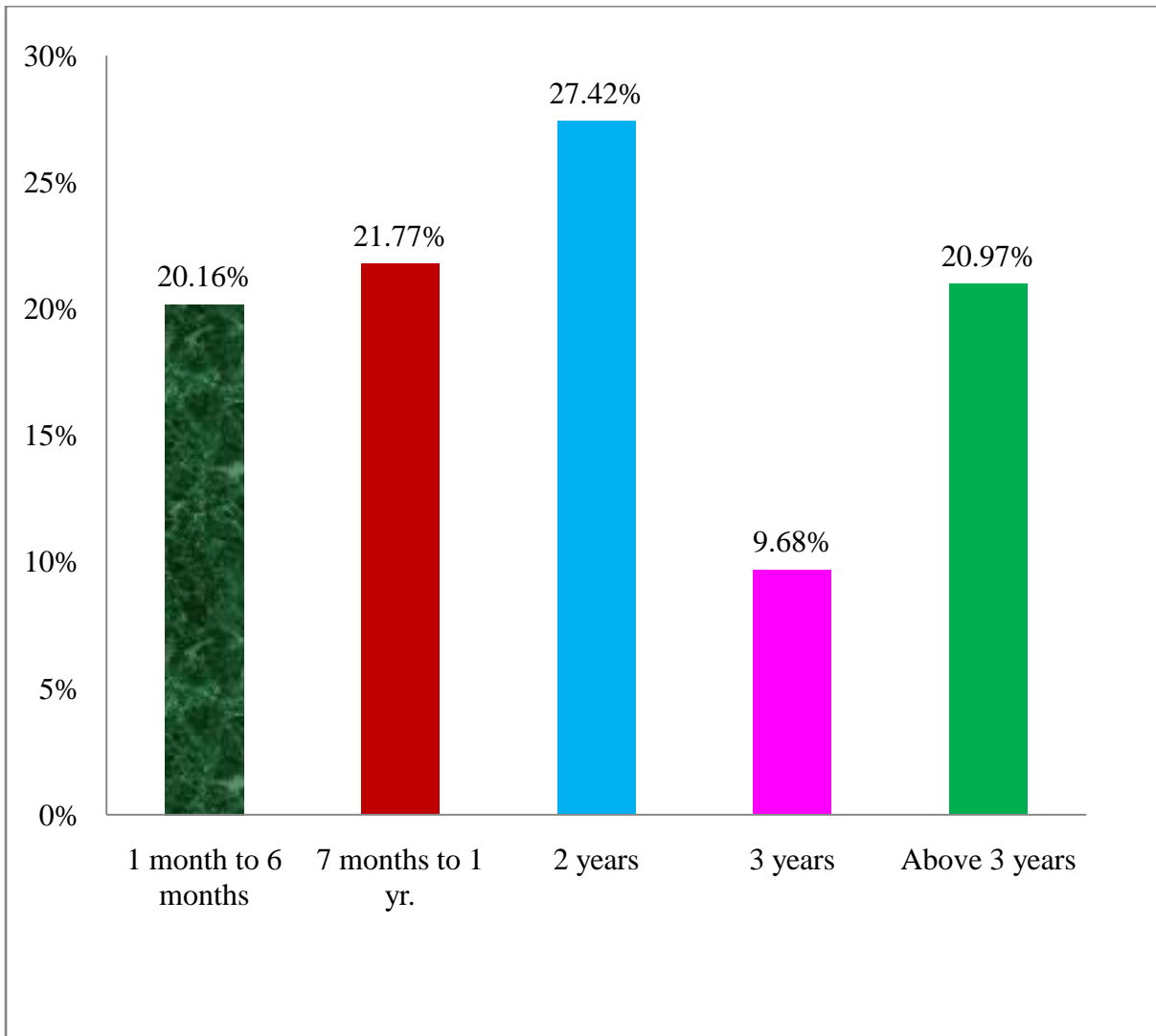**Findings related to academic achievement of the students**.

n=124
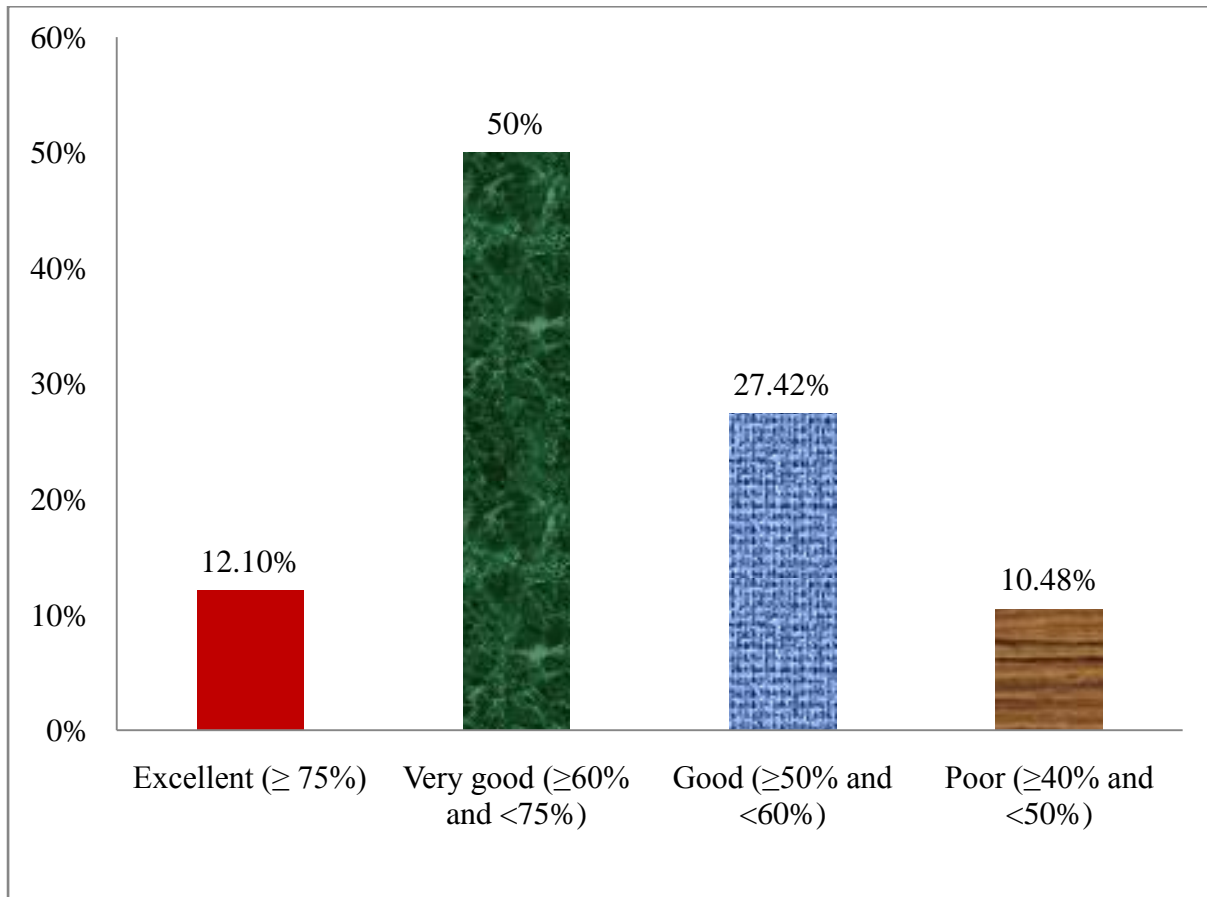
Figure 16: Bar diagram showing the percentage distribution of students according to academic achievement

Data presented in figure 16 shows that majority of the students (50%) had very good (≥60% and <75%) results in last board exam, 27.42% students had good (≥50% and <60%) results, 12.10% students had excellent (≥ 75%) results and 10.48% of the students had poor (≥40% and <50%) result in last board exam.

Section V
Findings related to correlation coefficient between addiction on digital medias, behavioral problems and academic achievement of the students.

Table 4 Correlation co efficient between the addiction on digital medias and the Emotional problem of the students.

n=124

Data presented in table 4 shows that correlation coefficient ("r") is 0.61. Here calculated "t" value is 8.45, which is greater than table value 1.96 (df ∞, 0.05 level of significance). So there was significant relationship between addiction on digital medias and emotional problem of the students.

Table 5 Correlation co efficient between the addiction on digital medias and the Conduct disorder of the students.

n=124

Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Addiction on digital medias	44.48	15.11				
			0.61	8.45	0.05	*significant
Emotional problem	4.36	2.021				

Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Addiction on digital medias	44.48	15.11				
			0.67	9.88	0.05	*significant
Conduct disorder	3.44	2.089				

Data presented in table 5 shows that co-relation coefficient ("r") is 0.67. Here calculated "t" value is 9.88, which is greater than table value 1.96 (df ∞, 0.05 level of significance). So there was significant relationship between addiction on digital medias and conduct disorder of the students.

Table 6 Correlation co efficient between the addiction on digital medias and the Hyperactivity problem of the student.

n=124

Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Addiction on digital medias	44.48	15.11				
			0.59	8.21	0.05	*significant
Hyperactivity problem	4.16	1.81				

Data presented in table 6 shows that co-relation coefficient ("r") is 0.59. Here calculated "t" value is 8.21, which is greater than table value 1.96 (df ∞, 0.05 level of significance). So there was significant relationship between addiction on digital media and Hyperactivity problem of the students.

Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Addiction on digital medias	44.48	15.11				
			0.78	13.58	0.05	*significant
Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Prosocial problem	6.08	2.177				
Addiction on digital medias	44.48	15.11				
			0.56	7.41	0.05	*significant
Peer problem	3.11	1.843				

Table 7 Correlation co efficient between the addiction on digital medias and the Peer problem of the students.

n=124

Data presented in table 7 shows that co-relation coefficient ("r") is 0.56. Here calculated "t" value is 7.41, which is greater than table value 1.96 (df ∞, 0.05 level of significance). So there was significant relationship between addiction on digital medias and peer problem of the students.

Table 8 Correlation co efficient between the addiction on digital medias and the Prosocial problem of the students.

n=124

Data presented in table 8 shows that co-relation coefficient ("r") is 0.78. Here calculated "t" value is 13.58, which is greater than table value 1.96 (df ∞, 0.05 level of significance). So there was significant relationship between addiction on digital medias and Prosocial problem of the students.

Table 9 Correlation co efficient between the addiction on digital medias and the academic achievement of the students who are using internet more than 1 year.

n=72

Variables	Mean	SD	"r" value	"t" value	Level of significance	Remarks
Addiction on digital media	44.57	15.34				
			0.469	4.45	0.05	*significant
Academic achievement	2.26	0.71				

Age in years	Dependence score		Total	Chi (χ^2)	df	Remarks
	Below Median	Median and above				

Data presented in table 9 shows that co-relation coefficient ("r") is 0.469. Here calculated "t" value is 4.45, which is more than table value 1.98 (df 71, 0.05 level of significance). Total 52 students out of 124 were using internet since 1 yrs whereas 72 students were using internet more than 1 year. So here sample size is 72 and mean value of addiction on digital media is 44.57 and academic achievement is 2.26. So there was significant relationship between addiction on digital media of the student and the Academic achievement of the students.

Section VI
Findings related to association between addiction on digital medias and selected demographic variables i.e. age, sex, monthly income of the family, number of siblings, type of family, father's education, mother's education, father's occupation, mother's occupation, duration of using internet.

Table 10 Association between addiction on digital medias and age of the students.

n=124

17 to <18 years	51	50	101		
18 and above	4	19	23	8.95	1	*Significant

With Yates' correction, df (1) =3.84, p<0.05 (significant)

Data presented in table 10 shows that there was significant association present between addiction on digital medias and age of the students because obtained χ^2 value is 8.95 at df (1), p<0.05, is more than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was more among 17 to <18 age group of students.

Table 11 Association between addiction on digital medias and sex of the students.

n=124

Sex	Dependence score		Total	Chi (χ^2)	df	Remarks
	Below Median	Median and above				
Male	33	33	66			
Female	22	36	58	1.82	1	Not significant

df (1)=3.84, p<0.05 (significant)

Data presented in table 11 shows that there was no significant association present between addiction on digital medias and sex of the students because obtained χ^2 value is 1.82 at df (1), p<0.05, is less than table value (3.84). So, irrespective of gender addiction on digital medias was almost similar.

Table 12 Association between addiction on digital medias and monthly family income of the students.

n=124

Monthly income of the family	Dependence score		Total	Chi^2 (χ^2)	df	Remarks
	Below Median	Median and above				
Below Rs.15000	31	35	66			
				0.39	1	Not significant
Above Rs.15000	24	34	58			

df (1)=3.84, p<0.05 (significant)

Data presented in table 12 shows that there was no significant association between addiction on digital medias and monthly family income of the students because obtained χ^2 value is 0.39 at df (1), p<0.05, is less than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on monthly family income of the students.

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Table 13 Association between addiction on digital medias and number of sibling of the students.

n=124

No. of siblings	Dependence score		Total	Chi^2 (χ^2)	df	Remarks
	Below Median	Median and above				
Having sibling	21	18	39			
				1.73	1	Not significant
Not having sibling	35	50	85			

df (1)=3.84, p<0.05 (significant)

Data presented in table 13 shows that there was no significant association between addiction on digital medias and number of sibling of the students because obtained χ^2 value is 1.73 at df (1), p<0.05, is less than table value

(3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on number of sibling of the students
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Table 14 Association between addiction on digital medias and type of family of the students.

n=124

Type of family	Dependence score		Total	Chi ^{2} (χ^2)	df	Remarks
	Below Median	Median and above				
Joint family	31	33	64			
				0.89	1	Not significant
Nuclear family	24	36	60			

df (1)=3.84, p<0.05 (significant)

Data presented in table 14 shows that there was no significant association between addiction on digital medias and type of family of the students because obtained χ^2 value 0.89 at df (1), p<0.05, is less than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on type of family of the students.
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Table 15 Association between addiction on digital medias and father's education of the students.

n=124

Father's education	Dependence score		Total	Chi ^{2} (χ^2)	df	Remarks
	Below Median	Median and above				
Below secondary	14	12	26			
				1.2	1	Not significant
Above Secondary	41	57	98			

df (1)=3.84, p<0.05 (significant)

Data presented in table 15 shows that there was no significant association between addiction on digital medias and father's education of the students because obtained χ^2 value is 1.2 at df (1), p<0.05, is less than table value (3.84).Therefore, it can be interpreted that addiction on digital medias was not dependent on father's education of the students.

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Table 16 Association between addiction on digital medias and mother's education of the students.

n=124

Mother's education	Dependence score		Total	Chi ^{2} (χ^2)	df	Remarks
	Below Median	Median and above				
Below secondary	19	17	36			
				1.46	1	Not significant
Above Secondary	36	52	88			

df (1)=3.84, p<0.05 (significant)

Data presented in table 16 shows that there was no significant association between addiction on digital medias and mother's education of the students because obtained χ^2 value is 1.46 at df (1), p<0.05, is less than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on mother's education of the students.

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Table 17 Association between addiction on digital medias and Father's occupation of the students.

n=124

Father's occupation	Dependence score		Total	Chi (χ^2)	df	Remarks
	Below Median	Median and above				
Self employed	34	37	71			
				0.84	1	Not significant
Employed	21	32	53			

df (1)=3.84, p<0.05 (significant)

Data presented in table 17 shows that there was no significant association between addiction on digital medias and father's occupation of the students because obtained χ^2 value is 0.84 at df (1), p<0.05, is less than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on Father's occupation of the students.

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Table 18 Association between addiction on digital medias and Mother's occupation of the students.

n=124

Mother's occupation	Dependence score	Total	Chi (χ^2)	df	Remarks

	Below Median	Median and above				
House wife	45	41	86			
				7.22	1	*significant
Employed	10	28	38			

df (1)=3.84, p<0.05 (significant)

Data presented in table 18 shows that there was significant association between addiction on digital medias and Mother's occupation of the students because obtained χ^2 value is 7.22 at df (1), p<0.05, is more than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was not dependent on Mother's occupation of the students.

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Table 19 Association between addiction on digital medias and duration of using internet by the student.

n=124

Duration of using internet	Dependence score		Total	Chi ^{2} (χ^2)	df	Remarks
	Below Median	Median and above				
Below 1 year	29	23	52			
				4.73	1	*significant
1 year and above	26	46	72			

df (1)=3.84, p<0.05 (significant)

Data presented in table 19 shows that there was significant association between addiction on digital medias and since when the student are using internet because obtained χ^2 value is 4.73at df (1), p<0.05, is more than table value (3.84). Therefore, it can be interpreted that addiction on digital medias was dependent on duration of using internet by the student.

Summary

This chapter deals with analysis and interpretation of data collection from 124 students by applying both descriptive and interferential statistics. The statistical tests employed are frequency and percentage distribution, Chi-square and correlation co-efficient. The result of statistical test showed that there was significant association exists between addiction on digital media and duration of using internet.

CHAPTER V
Summary of major Findings, Discussion, Conclusion, Implication, Limitation and Recommendation
This chapter provides an overview of research process including conclusion drawn from the findings and possible application of result in the health care delivery system, nursing education, administration and nursing research. The limitation of the study also has been stated here. The investigator make recommendations for future research related to the present study.
Major findings of the study
❖ **Findings related to socio demographic characteristics of school students**
• Majority of the students (81.45%) were 17 to 18 years old
• Majority of the students (53.23%) were male.
• Majority of the students (40.32%) students had monthly family income Rs.5000-10000,
• Majority of the students (46.77%) had one sibling
• Majority of the students (51.61%) belonged to joint family
• Majority of the students 29.83% of the student's fathers had secondary school education.
• Majority of the students 34.67% of the student's mothers had secondary school education.
• Majority of the students (27.41%) were using internet since 2 year.

❖ **Findings related to addiction on digital media**
• 60.48% of the students had Mild addiction on digital medias.
• 33.87% of the students had Moderate addiction on digital medias.
• 2.41% of the students had Severe addiction on digital medias.

❖ **Findings related to Behavioral problem of the students**
• 15.32% student had emotional problem
• 31.45% student had conduct problem

- 12.1% student had hyperactivity problem
- Less student(10.48%) had peer problem
- 23.39% student had prosocial problem
- Less 20.96% student had total difficulties.

❖ **Findings related to academic achievement**
Majority of the students have very good (≥60% and <75%) result in last board exam.

❖ **Findings related to the relationship between the addiction on digital media and the Behavioral problem of the students.**

- There was significant relationship between addiction on digital media of the student and emotional problem of the students.
- There was significant relationship between addiction on digital media of the student and the conduct disorder of the students.
- There was significant relationship between addiction on digital media of the student and the hyperactivity problem of the students.
- There was significant relationship between addiction on digital media of the student and the peer problem of the students.
- There was significant relationship between addiction on digital media of the student and the prosocial problem of the students.

❖ **Findings related to the relationship of addiction on digital media with the academic achievement**
There was significant relationship between addiction on digital media of the student and the Academic achievement of the students. In this study, 52 students out of 124 were using internet since 1 yrs whereas 72 students were using internet more than 1 year. So here sample size is 72.

❖ **Findings related to addiction on digital medias with socio demographic variables**

- There was significant association between addiction on digital media and age of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was significant association between addiction on digital media and Mother's occupation of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was significant association between addiction on digital media and marital status of the parents of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was significant association between addiction on digital media and duration of using internet. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and sex of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and monthly family income of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and no. of sibling of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and type of family of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and father education of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and mother's education of the students. df (1)=3.84, $p < 0.05$ (significant)
- There was no significant association between addiction on digital media and father occupation of the students. df (1)=3.84, $p < 0.05$ (significant)

Research Hypothesis
On the basis of inferential statistical findings, the following hypothesis has been drawn:

- **H1** There was significant relationship between addiction on digital medias and emotional problem of the students at 0.05 level of significance
- **H2** There was significant relationship between addiction on digital medias and the conduct disorder of the students at 0.05 level of significance.
- **H3** There was significant relationship between addiction on digital medias and the hyperactivity problem of the students at 0.05 level of significance.
- **H4** There was significant relationship between addiction on digital medias and the peer problem of the

       students at 0.05 level of significance.

H5   There was significant relationship between addiction on digital medias and the Prosocial problem of the students at 0.05 level of significance.

H6   There was significant relationship between addiction on digital medias and the academic achievement of the students at 0.05 level of significance.

H7   There was significant association between addiction on digital medias and age of the students at 0.05 level of significance.

H8   There was significant association between addiction on digital medias and Mother's occupation of the students at 0.05 level of significance.

H9   There was significant association between addiction on digital medias and duration of using internet at 0.05 level of significance.

Discussion in relation to other studies

The present study is undertaking to identify addiction on digital medias, the behavioral problems and academic achievement among the students in selected Higher secondary School of West Bengal.

❖   **Discussion in relation to Internet addiction and socio demographic variables**

In present study	In other study
1. In the present study, it is revealed that male (53.23%) and female (46.77%) have severe internet addiction 2.41% and moderate addiction 33.8% and mild internet addiction 60.48%. There is significant association between addiction on digital media and age, Mother's occupation, and duration of using internet of the school students.	Present study is supported by these following studies. 1. Meena P, Mittal P, Solanki R [37] (2012) conducted a study where 200 subjects, both boys and girls were included in the cross sectional study who were given a 20 item Young's internet addiction test modified for social networking sites.24.74% of the students were having occasional or 'frequency' problems while 2.02% of them were experiencing severe problems due to excessive time spent using.
	2. Sasmaz T, Oner S, Kurt A, Yapici G, Yazici A, Bugdayci R et al. [35] (2014) conducted cross-sectional study included 1156 students, among whom 609 (52.7%) were male. The students mean age was 16.1 ± 0.9 years. 79% of the students had a computer at home, and 64.0% had a home Internet connection. The result shows in this study that 175 (15.1%) students were defined as Internet addicts. Whereas 20.4% boys and 9.3% girls were internet addicted (P < 0.001), there was independent relationship between Internet addiction with gender, grade level, having a hobby, duration of daily computer use, depression and negative self-perception. According to their study results, the prevalence of Internet addiction was high among high school students.
	3. Karacic S, Oreskovic S [34] (2017) conducted a study where there was a weak but positive correlation between Internet addiction and age subgroup (*P*=.004). Irrespective of all age subgroup, male adolescents mostly contributed to the correlation between the level of internet addiction and the age sub group (P=.001).

❖   **Discussion in relation to behavioral problem**

In present study	In other study
1. Based on the findings and objectives of the present study it is revealed that the prevalence of abnormal behavioral according to self-rated SDQ was found to be 22.58% while prevalence of borderline abnormal behavior was 20.96% and majority 56.45% of study subjects (age 17 to 19 yrs) were normal having no behavioral problem.	1. The findings was supported by a cross sectional observational study conducted by Masare M, Bansode-Gokhe S, Bansode-Gokhe S, Shinde R, Shinde R [66] (2017), the prevalence of abnormal behavioral according to self-rated SDQ was found to be 1.6% while prevalence of borderline abnormal behavior was 11.2% and majority 87.2% of study subjects were normal having no behavioral problem among 12 to 14 years student. The combination of abnormal and borderline behavioural problems were more prevalent in the age group between 12-13 years (64.1%) and between 13-14 years (30.8%), also more prevalent among girls (69.2%) compared to boys (30.8%).
2. In this study the result of total (overall) behavioural problem was found among 22.58 % adolescents. While classifying, 15.32% were suffering from emotional disorder, 31.45% from conduct problem, 12.1% from hyperactivity/inattention, 10.48% from peer relationship problem and 23.39% from prosocial activities.	2. Kafle T, Kafle T, Mashreky S, Rimal H, Sapkota D, Pokhrel A [48] (2019) conducted a study adopts analytical cross-sectional design with sample size 1500 involving 11 to 17 year school going adolescents. Multistage probability sampling technique was used to draw the sample and validated self-report SDQ was used to estimate the behavioural problems. The prevalence of total (overall) behavioural problem was found among 35.0 % adolescents. While classifying, 13.3% were affected by emotional disorder, 11.20% from conduct problem, 7.2% from hyperactivity/inattention, 4.9% from peer relationship problem and 2.1% from prosocial activities. Adolescents of less educated parents, female sex, Mountain ecological belt and those without parents were more vulnerable to behavioural problem. Therefore, parental care seems to be considerably essential to scale back the behavioural problems among children

❖ **Discussion with the relationship of addiction on digital media and academic achievement**

In present study	In other study
1. In the present study, there is significant relationship between addiction on digital media of the student and the academic achievement of the students.co-relation of coefficient ("r") is 0.469. Here calculated "t" value is 4.45, which is less than table value 1.98(df 71, 0.05 level of significance). Total 52 students out of 124 are using internet since 1 yrs whereas 72 students are using internet more than 1 year. So here sample size is 72 and mean value of addiction on digital media is 44.57 and academic achievement is 2.26.	Present study is supported by the following two studies. 1. Kodavanji B, Chathoth V, Kumar N, N A, Kini R, Pai S [61] (2014) noted and reviewed that excessive internet use was evolving as a major negative consequence in adolescent and youth and they were at most risk in terms of mounting problematic internet use the internet addiction was associated with the academic performance, dullness, the lack of time and pursuing hobbies. 2. Balhara Y, Mahapatra A, Sharma P, Bhargava R [65] (2015) reported that the students who were in the severe and profound groups of internet addiction were found to have detrimental effects on both in their academic performance and psychological state instead of the students who were hooked in to the web usage moderately.

In present study	In other study

Conclusion

In a highly digitized era, people can hardly live without computer and Internet. While we are appreciating the conveniences and advantages brought by the Internet, there is growing concern about addictive Internet use and whether this can lead to a 'problematic use' of social networking sites. Given the pervasive use of social networking sites and their impact, it may be of interest to not only researchers but to parents, teachers and other care givers of children.

From the findings of the present study it has been observed that severe addiction on digital media was 2.41%.Majority of students had mild emotional, conduct, hyperactive, peer, prosocial problem are 66.94%, 54.84%, 72.58%, 50%, 59.68%.There has been significant association between addiction on digital medias and occupation of mother of the student, duration of using internet by the student, marital status of the parents. There has been significant relationship between addiction on digital medias and behavioral problems of the student. There has been significant relationship between addiction on digital medias and academic achievement of the student.

Implication

The findings of the study have several implications for nursing practice, nursing education, nursing administration and nursing research.

1.   Nursing practice

The findings of this study emphasize the need to make awareness among the school student. Family member and administrative authority of the school student should be aware about the effect of internet on students' behavior and academic achievement. The nursing staff should take active part on awareness programme through IEC. Moreover it is also that there is significant association between addiction on digital medias and duration of use of internet. As addiction on digital medias and behavioral problems of the students are related .So nursing staff must be alert about those problems of the students who are addicted on digital medias.

2.   Nursing Education

The role of professional nurse as an educator is very important today as they can provide health education to the student in a wide range of settings in the community, hospitals, clinics, school and college regarding the bad effects of excessive use of internet. Health care provider would encourage the family members to support the student who are addicted on internet to get rid of behavioral problems related with excessive use of internet.

3.   Nursing Administration

The findings of the study would be useful in further planning and organizing teaching programme for the nursing students and the impact on addiction on digital medias, their behavioural problems. Nurse administrator should arrange in service education programme to develop skill in providing care to the student regarding how to assess addiction on digital media and behaviour problems of the students.

4.   Nursing Research

There is vast scope as well as need to conduct further research studies in different settings to find out the causes of addiction on digital medias. Emphasis should be given on publication of research findings in journals and books.

Limitation

The study findings could not be generalised because of the following reasons

*   The study was carried out with a small sample, so it is difficult to generalize the findings.

*   Sample was purposive

*   Participated only those subjects as a sample who were able to read and write in Bengali and English.

*   The tool for eliciting the knowledge was limited to a written response obtained through a structured questionnaire.

*   The study was conducted only two selected school of Purba Medinipur District which lack diverse population and limits generalization of findings.

Recommendation

 On the basis of the findings the recommendations are made for future research.

1.   The study can be conducted with a large sample to make a generalized.

2.   A case-control study can be conducted to find out the actual factors which are responsible for internet addiction.

3.   A Longitudinal study can be conducted find out behavioural problem and internet addiction.

4.   The study can be carried out with large sample in different settings with different background.

5.   A similar study can be done with the others factors excluding the factors that are used in the present study.

Summary

This chapter deals with the major findings of the study, discussion in relation to the findings of other studies, conclusion and implications in relation to Nursing Education, Nursing practice, Nursing Administration and Nursing Research. In addition to this, the limitations of this study have been incorporated, followed by recommendation.

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