CHAPTER ONE

INTRODUCTION

1.1   Background of the Study

Society is a common place of different people having variety of race, language, sexes, religions, casts and classes. Among these disabled people is also one. It occurs in all ages, sexes, castes, class in facts disability is a human reality. It is not only found in human being but in animals as well. It is either from birth or due to accident, war or result of disease. In the past people accepted disability as part of their fate or as the punishment by God for some sin committed in the past life and were reconciled to live with it. Now, with the advancement in science, many disabilities can either be minimized or cured. Sometime ago people idea of disability was very distressing. If a child was born with any kind of disability or became disabled for any other causes, they would attribute that to many strange taboos, spiritual and traditional beliefs.

During the course of development the definition of disability is also changing. The disabled always wish for the words and recommendations used for them not to be disgraceful, uncivilized and neglected but the different phrasal recommendations like people with different capabilities and challenging people regarding sentimental complexities. The Nepalese constitution defines persons with disabilities as persons who are mentally or physically unable or incompetent to lead a normal life. This term includes persons whose mobility is impaired, who suffer from spinal curvature, who are visually impaired in one or both eyes, who have hearing impairment, who are unable to speak properly, or whose hands, legs or fingers are impaired or missing. Today disability is seen very differently even though many people have still not come to terms with it.

A common vision is that having a disability makes an individual less competent of performing a variety of activities. However they are capable to carry out various activities ranging from costmary to refer to such people as 'differently able' rather

than disabled. The concept of society towards disabled person has considerable changed after the success of Mr. Thomas Whittaker from USA, climbing Mt. Everest in 1998 with the help of an artificial leg. Another US citizen Erek Weihemmayar, a blind person climbed Mt. Everest in 2001 and laid another brick on the wall of success (Joshi, 2005).

There is large and growing number of people of disability in the world. According to the World Health Organization (WHO) approximately 10 percent of the total world populations are disabled. At least one person out of 10 is disabled by physical, mental or sensory impairment, and at least 25 per cent of any population is adversely affected by the presence of disability.

Five categories of the people with disabilities: visually impaired, hearing impaired, physically disabled, mentally retired and mentally disordered is recognized by the Government of Nepal. According to the National census 2011, almost two percent (1.94%; 5,13,321) of the total population of Nepal having some kind of disability. The devastating earthquake of 2015 is believed to have added more on the existing number.

Nepal has already a signatory to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Fragmented efforts are being carried out by different government entities, INGOs and NGOs for helping persons with disabilities. In Nepal since 1992, every year December 3rd is celebrated as international day of the disabled person with various programs. Now small number of people with disability started coming out of their houses, seeking for better opportunities, inclusion and social participation. Still the majority of people with disability are suffering due to layers of social barriers.

It is more imperative than ever today, to address issues facing persons with disabilities and remove barriers that prevent them from fully participating in society. Technological advancements today have greatly enhanced the access of the disabled, both to the physical environment, as well as to information and services. (Khanal, 2012). As we approach the 21st century there is noticeable advancement in technology

that is making communication much easier for the people of the world. Technology of the disabled has made numerous advances over the recent years. The things they have been doing to help disabled people to be able to stay with the advance that have been going in the world is proceeding nicely.

Technology is an important tool for persons with disabilities in order to maximize the number of opportunities available to them. It helps them break barriers, enhance their creativity and productivity and to enable them to engage with the mainstream society. It can help them with mobility and to easily access relevant information. (KC. Rajesh man, 2015). There are several of technologies made for people with disabilities which called assistive technology (AT).

Assistive technology (AT) describes any device or other solution that is used by people with disabilities to assist in performing task or activities. AT refers to any item, piece of equipment or system whether acquired commercially, modified or customized that is commonly used to increase maintain or improve functional capabilities of individuals with disabilities. (Il w and C. Sellers, 2010)

AT can helps people with disabilities improve their quality of life, contribute economically and socially and increase their independence. For example wheelchair, walker, Braille, electronic reading machine, portable keyboard, assistive listening devices, speech reading software, smart phones, modified scooter, prosthetic and orthotic devices, etc.

Technology is the important part of our life in this globalized world. Access to appropriate technology results in efficiencies and creates adequate opportunities for us all, it is even more important for the person with disability, for their employment and equal participation in the society and end all forms of discrimination. The government, civil society, donors, I/NGOs, media and all people should join hands to remove all types of barriers that people with disabilities face. For this movement technology can play well role.

1.2   Statement of the Problem

In developed countries, a large body of empirical research shows that persons with disabilities experience comparatively lower educational attainment, lower employment and higher unemployment rates, worse living conditions, and higher poverty rates (Mitra, Posarac & Vick, 2011). In the developing countries 80 percent of all disabled person live in isolated rural areas. The problem is made more complex by the fact that for the most part disabled person are usually economically weak. It is disheartening that most new technologies are still beyond the reach of world's disabled community, particularly those living in developing countries like Nepal.

Rights of all people with disabilities to participate fully in society have not been practiced by the state. In terms of health, accessibility, education, economy, and employment opportunities people with disabilities are treated as second-class citizens. A research has indicated that most of the disabled persons (69.3%) depend upon support from their family members. Having a disabled person posed problems in most (90.5%) of the households in the absence of adaptive or assistive technical tools they have traditionally been deprived of opportunities in education, health and employment, making it hard for them to function on equal footing with those without disabilities (Panthi, 2011).

Disability friendly physical infrastructure and communication systems are keys to increase the access of persons with disabilities to different services. Government adopted The Accessible Physical Structure and Communication Services directive in 2012, however, the recently established structures, at least roads, public buildings, and governmental websites, do not strictly follow the directive. (SINTEF technology and society, 2016). Technological development has fundamentally altered the fabric of social and economic life, but how have they affected people with disability? In developing countries like Nepal has the disabled population participated in and benefited from these changes? What factors are associated from technology adoption and use by disabled person? The research will examine various facets of this nexus between disability and technology.

Many persons with disabilities are still out of reach of modern technology. Prevailing poverty, high rate of illiteracy, lack of knowledge, lack of awareness, low penetration of affordable technologies, lack of trained person to develop and use assistive technology, non affordability of internationally available technologies are some obvious challenges to be taken into consideration. People with disabilities have significantly lower rates of information and communication technology use than non-disabled people, and in some cases they may be unable to access even basic products and services such as telephones, television, and the Internet.

Here are some problem related questions to searching the answer of this study:

- What problems and challenges disabled facing in their daily life?
- What types of technology physical disabled people are using?
- What are the barriers to the use of technologies for disabled?
- Is technology help to improve their social relationships and economic life?
- What is their situation after using technology?
- Is there the disability friendly environment in the area where they living?

1.3   Objectives of the Research

The general objective of this study is 'to find out the impact on the life style pattern of disabled people.

The specific objectives are as follows:

- To find out the physical barriers that disabled people are facing.
- To find out the barrier to use of assistive technologies for disabled people.
- To find out the changes of social and economical status of the disabled people after using technology.

1.4   Definition of the key Terms

Disabled: Having a physical or mental condition that limits their movement, senses or activities.

Disabilities: limitation in the ability to pursue an occupation because of physical or mental impairment. Is defined as a condition or function judged to be significantly impaired relative to the usual standard of an individual or group.

Technology: The branch of knowledge that deals with the creation and uses of technical means and their interrelation with life, society and the environment, drawing upon such subjects as industrial arts, engineering, applied science and pure science.

Assistive technology: Assistive technology (AT) is any products, devices, piece of equipment, software program or product system that is used to increase, maintain or improve the functional capabilities of persons with disabilities.

Assistive device: An Assistive Device is any device that helps someone do something that they might not otherwise be able to do well or at all. Generally the term is used for devices that help people overcome a handicap such as a mobility, vision, mental, dexterity or hearing loss.

Barriers: barriers to accessibility are obstacles that make it difficult, sometimes impossible for PWDs to do things most of us take for granted.

1.5   Limitation of the Study

The research is associated with disabled of Pokhara Lekhnath metropolitan city of Kaski district. As all the issues cannot be included in a single research and all the supported people will not represent as respondents due to shortage of time, limited budget and other different types of barriers. Some limitations are as follow:

) The study is limited the differently able people of Pokhara Lekhnath metropolitan city.

) PWDs are associated from different organization. Those who are not affiliated are in distant   places are not the part of research.

) It is focused mainly on the physical disabled people and their barrier to use of assistive technologies.

) This study is focused to know the changes in social and economical status after using assistive technologies.

1.6   Rationale of the Study

The issues of disables have become a worldwide problem today. We are living in 21st century and technologies are played important role to live life easily and this is more important for people with disability. Developed and emerging countries have greater access to AT while developing countries with slow economic growth have low condition of AT. In developing country like Nepal, there are various problems to develop technologies for disabled. However, even small change can help them. Technology can rehabilitate them educationally, professionally, economically, physically, mentally, socially and to make them fully participate in the community on the basis of equality.

The research is mainly focused on technology and disabled people. Find out the barriers of disabled and how their life changed by using such technologies. It can also reflect the actual reality of the condition of disabled during the course of collection of the view and opinions from disabled themselves which will make an aid during the implementation of policies, rules and program for them. The data and information will also be helpful for other researching students.

1.7   Organization of the Study

The thesis report id divided in eight chapters. The first chapter is about the introduction where background of the study, statement of the problems, objectives, definition of the key terms, limitation of the study and rationale of the study. Concept review, theoretical review, review of previous studies and conceptual framework is discussed in the second chapter. The third chapter is about the research methodology which deals about the justification of the study selection, research design, universal and sampling, nature and source of data, data collection techniques and tools, method of data analysis.

Social demography is illustrated in the fourth chapter. Different barriers of disabled people is fifth chapters where try to describe the barriers faced by them. Sixth chapter is about the relation between assistive technological devices and PWDs. Impact of ATDs on social and economical life of PWDs is seventh chapter of the study. Lastly chapter eight is about the summery, findings, conclusion and recommendation.

CHAPTER TWO

LITERATURE REVIEW

A literature review is a search and evaluation of the available literature in given subject of chosen topic area. This chapter emphasize about the literatures, which were concerned in this connection. Conceptual framework given by different authors and intellectuals of this study area, book journals, research work and previous thesis related to disability.

In this chapter the literature review is presented in four different topics. The first topic is about the conceptual review of the research. Second topic is about theoretical review of the research whereas third topic is about the review of the previous studies and lastly four topic is try to illustrated the conceptual framework of the study.

2.1   Concepts Review

2.1.1 Concept review on Disability

"Disability" is a word often used in daily conversations and holds different meanings for different people. The concept of disability is complex, and there are historical, social, legal and philosophical influences on its interpretation. The experience of disability is unique to each person but there are common impacting factors.   The Disability Discrimination Act (DDA) defines a disabled person as someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities. To understand the situation of disability a conceptual clarity, which demarcates the condition of impairments, disabled, disabilities and handicaps, is important.

⌡ **Impairment:** technically, the term 'impair' denotes damage or loss of physical, psychological or anatomic function or structure. These concern disturbances at the

level of the body structure or mental function. This could mean loss food/arm, poor eye side, hearing impairment, paralysis of limbs, defective vision.

- **Disabled:** having a physical or mental disability: unable to perform one or more natural activities (such as walking or seeing) because of illness, injury, etc. The word disabled came to be used as the standard term in referring to people with physical or mental disabilities in the second half of the 20th century - and it remains the most generally accepted term in both British and US English. Lately, "Disability" and "Disabled" are terms that are undergoing change due to the disability rights movement in the U.S. and U.K.

- **Handicap:** Any physical or mental defect, congenital or acquired, preventing or restricting a person from participating in normal life or limiting their capacity to work. A handicap is a disadvantage in a person's life due to impairment of disability as compared to other person.

- **Disability:** A disability describes a functional limitation. As a result of impairment a person might not be able to perform activities of daily life. Disability is the consequence of an impairment that may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these. A disability may be present from birth, or occur during a person's lifetime.

There are several types of disabled, but in Nepal for the purpose of providing various services, Nepal government has officially recognized only five types of disabilities. There are:

- Physical disability (locomotors)
- Visual disability
1. Blind
2. Visual impaired
- Mental disability (Mental Retardation)
- Auditory disability
1. Deaf
2. Hearing impaired
- Mental disease (Mental illness)

In all there, the causes of a physical disability are as varied as the conditions themselves. They usually fall into one of two categories:

Hereditary/ Congenital: This is where a person has been born with a physical disability or developed one due to inherited genetic problems, has suffered an injury at birth, or has issues with their muscles.

Acquired: An acquired physical disability could be due to a road traffic accident, workplace incident, via an infection or disease, or as a side effect of a medical condition such as a stroke or cancer.

People with physical disabilities have a physical impairment which has a substantial and long term effect on their ability to carry day-to-day activities.

Many causes and conditions can impair mobility and movement. The inability to use legs, arms, or the body trunk effectively because of paralysis, stiffness, pain, or other impairments is common. It may be the result of birth defects, disease, age, or accidents. These disabilities may change from day to day. They may also contribute to other disabilities such as impaired speech, memory loss, short stature, and hearing loss.

Types of physical disabilities:

⟩ Cerebral Palsy (CB)
⟩ Spine Bifida (SB)
⟩ Spinal injury
⟩ Poliomyelitis
⟩ Multiple Sclerosis (MS)
⟩ Muscular Dystrophy
⟩ Dwarfism
⟩ Amputation
⟩ Club Foot
⟩ Contractures
⟩ Hip joint problem
⟩ Osteogenesis Imperfecta (OL)

2.1.2 Concept of Assistive Technology

Technology is the collection of techniques, skills, methods and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation. Technology can be the knowledge of techniques, processes, and the like or it can be embedded in machines, computers, devices, and factories, which can be operated by individuals without detailed knowledge of the workings of such things. Technology is the term that may be new but it is describing something which is not new at all which is affected our daily life.

Technology means process or products that make life easy. The modern way of doing things today are far easier and faster than they use to be in the past. Talking about PWDs, nowadays technology such as wheelchairs, walker, modified scooters, Braille, smart mobile phone, screen reading software, large print, tactile keyboard are way useful for them. AT that helps PWDs to do something they couldn't do otherwise. Like walk, run, communicate and more. These helpful tools can be as common as glasses that make it possible for a person to read and learn. Help of these AT they can be able to do anything. Even a simple device can provide effective support for the disabled. For example a blind person needs a talking technology while a person with difficulty in using fingers or who has lost both hands may need screen touch or voice modulated technologies. For the help of tactile keyboard they can easily type what they want.

2.1.3 Barriers to accessibility

1. **Attitudinal**

   Some people may not be aware that difficulties in getting to or into a place can limit a person with a disability from participating in everyday life and common daily activities. Attitude is behaviors of people to another people or how people treat you. People with disabilities often faced attitudinal barriers through other people.

2. **Organizational**

   Policy or organizational barriers are frequently related to a lack of awareness or enforcement of existing laws and regulations that require programs and activities be accessible to people with disabilities. Denying qualified people

with disabilities the opportunity to participate in or benefit from federally funded programs, services, or other benefits and the result is they have less experience about the priority in job or services in privet or government firms.

3. **Technological**

   People with disabilities face a variety of barriers to use different technologies. Assistive technologies are for specific needs to help the person function more independently. But it can create unintentional barriers for some users. They are not affordable, unavailability, lack of information are the major barrier of using technologies for people with disabilities.

4. **Social**

   Social barriers are related to the conditions in which people are born, grow, live, learn, work and age or social determinants of health that can contribute to decreased functioning among people with disabilities.

5. **Physical**

   The barriers related to elements such as the design of buildings, roads, footpaths any public places and private places. Steps, narrow doors, toilet and bathrooms, home appliances, slippery floors are the main physical barriers for people with disabilities.

2.2 Theoretical Review

2.2.1 Medical Perspective of Disability

The medical model views disability as a feature of the person, directly caused by the disease, accidents or other health condition, which requires medical care provided in the form of individual treatment by professionals. Disability, on this model calls for medical or other treatment or intervention, to correct' the problem with the individual.

The medical model or illness approach is based on the view that disability is caused by disease or trauma and its resolution or solution is intervention provided and

controlled by professionals. Disability is perceived as deviation from normality and the role of persons with disability is to accept the care determined by and imposed by health professionals who are considered the experts. In this model, disability is considered as residing within the individual. This approach to disability has been rejected by many individuals with disability and disability advocacy groups, because it does not cover the full spectrum of issues related to living with a disability. Further, it ignores the ability of many individuals to live full and successful lives and to be independent, the impact of a disability on access to health care, and the need to modify how care is delivered because of a disability. The medical model reinforces the view that physicians, nurses and other health care professionals are best qualified to make key decisions about health issues. Individuals with disabilities are often regarded as tragic. (Smeltzer, S.C, 2007)

2.2.2 The Social Model of Disability

In contrast in the social model the focus is on the society, which imposes undue restrictions on the behavior of persons with impairment. In this, disability does not lie in individuals, but in the interaction between individuals and society. It advocates that persons with disabilities are right holders and are entitled to strive for the removal of institutional, physical, informational and attitudinal barriers in society (Malla, 2011).

Disability in complete contract is social disadvantage and discrimination. Society marginalizes people with a disability because they have lost old roles and statuses and are labeled as "disabled" person According to the sociologist Eliot Freidson (1965) "The expectations for people with a disability arc socially constructed factors. Because people with physical disabilities are often viewed as being different or deviant, they are expected to act differently."

The behaviors which they are expected to display characterize the Sick Role. According to Haber and Smith (1971), the general tendency of the able-bodied population is to treat a disability as an extension of the sick role. In Freidson's discussion of Talcott Parsons' theory of the sick role (1965), he states that, through the sick role, a person considered deviant finds "legitimacy" in his deviance. Legitimation is the process of exempting a person from responsibilities and usual role requirements

by explaining the behavioral variations in normatively acceptable terms. The right to behave defiantly or differently is conditionally granted, rather than punished. As such, illness becomes an acceptable reason for failing to meet the usual social role obligations (Haber and Smith, 1971). In this way, legitimation can be beneficial to the individual. (Cindy S. Spiller, 1982). Disability is caused by the way society is organized rather than by a person's impairment or difference. It looks at ways of removing barriers that faced by disabled people. When barriers are removed disabled people can live life independently and can be equal in society.

The social model of disability was developed because the traditional medical model did not explain their experience of disability. Every disabled person has the right to live their life and work towards their goals without being limited by other people's expectations or prejudices. People with disability have the right to control over all decisions that shape their future. Disabled people should have the same opportunity to education, work and all other things in home and society. The social model basically says disabled people are those who are with impairments and those impairments clearly have an impact on how people with disability live their lives but the impairments are not the things which disabled them. They are disabled by the world around them and if the world was more accessible, they would be less disabled. Disabled people are disabled by barriers that they face and by the attitudes that they face in society. The person's hasn't got a disability, it's the things. For example the wheelchair user got a place with lots of steps they are making him/her disabled because he/she not allowed into the building without support.

A social of disability does not mean that there is no place for medical or other professionals. From a conflict perspective, persons with a disability arc members of a subordinate group in conflict with persons in positions of power in the government. Nowadays, Disabled people involve of their civil rights, planning and policy to removing disability barriers.

2.2.3 Globalization prospection

Globalization is the process of the formation of a global capitalist world system. Globalization is seen primarily as economic but it is also social, cultural and political. According to Wikipedia (the free encyclopedia) "The globalization is the process of international arising from the interchange of world view, products, ideas and other aspect of culture." Globalization is a process of interaction and integration among the people, companies and government of different nations. Globalization is a present process in the new century that has impact on several areas including health and disability. The effects of globalization on people with disabilities are complex and differ from country to country, by the type of disability, and other factors, such as the segment of society. For example, in developed countries that are experiencing greater economic disparities, there may be losses in social support, in developing countries that are experiencing economic benefits; some marginalized people with disabilities may experience greater access to the workforce and to supports while others are left without the supports that were previously available through extended families and local communities. This is also complicated by migrations to cities and immigration that isolate families.

A process driven by international trade and investment and aided by information technology. With technology the world has changed drastically. Most of the innovation from the technological advance has very important effect on the lives of people in the world. Globalization has set in motion a process of far-reaching change that is affecting everyone new technology has created a world more interconnected that ever before. Globalization is strongly grounded in information technology there is a greater scope for participation of disabled in economic relations.

Rughava Reddey (2013) wrote in web side Research get.net that globalization is strongly grounded in information technology there is a greater scope for participation of disabled in economic relations. On the other hand globalization turns citizens as consumers. Increasing penetration of market forces and declining presence of state, the outcome of globalization has debilitating effects on the persons with disabilities, particularly in developing countries.

Globalization has both positive and negative influence on everyday life of people with disabilities. Positive may be easier sharing of ideas and solutions, and easier access to the novel knowledge and sometimes even technology.

People in developing countries are suffering with a disability but do not have access of the new technology that ad to their condition. The world uses globalization to address these kinds of issues. "Globalization is a process of interaction and integration among the people, companies and government of different nation, a process driven by international trade and investment and aided by information technology."- Suny Levin institute

Globalization gives all nation an opportunities to success but disability, aid halts succession there needs to be spread of technology for the disabled.

2.2.4 Modernization prospection

Modernization theory maintains that traditional societies will develop as they adopt more modern practices. Proponents of modernization theory claim that modern states are wealthier and more powerful and that their citizens are freer to enjoy higher citizens of living. (Wikipedia, encyclopedia).

In sociology modernization is the transformation from a traditional, rural, agrarian society to a secular, urban, industrial society. Modern society is industrial society. To modernize a society is, first of all, to industrialize it. Industrialism is an economic system profound economic, social, political, and cultural change. It is by undergoing the comprehensive transformation of industrialization that societies become modern.

New technology is a major source of social change. Cell phone for example has changed the lives of millions throughout the world. Thereby, technology for disabled makes it possible for them to be a part of developing process. We can say that modernization is benefits system for people with disability, help of the modern technologies they will be able to work as much as normal people. AT is helping people with disabilities to lead completely different lives than they might otherwise have managed. It gives them self-confidence, it can help them be more independent, AT can boost engagement among users.

2.3.5 Universal design

Universal design is an approach to design that works to ensure products and buildings can be used by virtually everyone, regardless of their level of ability or disability the term "universal design" was coined by the fellow of the American Institute of Architects Ronald L. Mace. Universal design refers to board spectrum ideas meant to produce building, products an environment that are inherently accessible to people without disability and people with disability.

Some example of universal design:

- Installing standard electrical receptacles higher than usual above the floor so they are easy reach of everyone.
- Selection wider doors.
- Making flat entrances.
- Installing handles for twisting to operate such as loop handles
- Storage space within reach of both short and tall people.

Universal design is simple designing all products buildings and exterior space to be usable by all people. Universal design is not a design style but an orientation to design. University design follows the principle of flexibility. It is important that the design is flexible enough to apply all different kind of people who have huge varieties of abilities or disabilities. Not only people with disability can get benefits from them it everyone benefits from it.

2.3 Review of Previous studies

Only few online journals and literatures are available regarding disability study in Nepal. Among the studies conducted in disability in Nepal below are some of the studies and summaries:

The National Survey on Living Condition among Individuals with Disabilities in Nepal by Arne H. Eide, Shailes Newpane, Karl-Gerhard Hem (2016). This report is from the National study on living conditions among people with disabilities carried out in Nepal in 2014-2015. It was the first comprehensive disability survey in Nepal by SINTEF technology and society, department of health research. This study was

designed and implemented based on the consultations of the Steering committee representing members from the Ministry of Women, Children and Social Welfare, National Planning Commission, Central Bureau of Statistics, Ministry of Education, Ministry of Health and Population, Department of Education, Valley Research Groups and National Federation of the Disabled, Nepal.

Digester, disability and different presented by Social Science Baha and published with assistance from the United Nation Development Program (UNDP) in Nepal and National Federation of Disabled Nepal (NFD-N). This research based the unique challenges faced by PWDs in the week of the earthquakes that devastated Nepal in April and May of 2015.

A situation analysis of disability in Nepal by Sharad Chandra Thakur Tribhuwan university journal, VOL XXV, no.1 (2005). Paper describes the historical and present situation of PWDs in Nepal and the changing concepts of disability, expectations of disability, education, rehabilitation, and empowerment of PWDs.

Making ICT and mobile phones assessable for person with disability in Nepal by Ananda Raj Khanal, the draft report of the Nepal Telecommunication Authority (2012) .This report documents the state of access to the internet and information and communications technologies, with a special focus on mobile phones for persons with disabilities in Nepal. It concludes with recommendations for inclusion of the accessibility agenda in the overall telecommunication (ICT) policy framework of Nepal and provides two sample templates for funding projects on ICT accessibility in the area of computers and mobile phones

Silent screams: A on study on sexual violence against blind and visual impaired women of the Kathmandu valley by Neeti Aryal, Thesis on Masters in sociology from Tribhuvan University (2004). The study is focused on the sexual violence against blind and visual impaired women, the study aims to uncover the silent scream of the victims and bring the unvoiced topic in notice of violence against women activists and disability experts. This study argues that the violence against blind women or any kind of disabled women cannot be chunked within the violence on general women.

Sociological study of disabled in Pokhara by Mahendra Lamichhne thesis on Masters in Sociology from Prithvi Narayan Campus (2013). Here the study is focused on the empowerment on economic, social, political, educational, legal, marital status of the PWDs. This study has analyzed and explored the condition and status of PWDs.
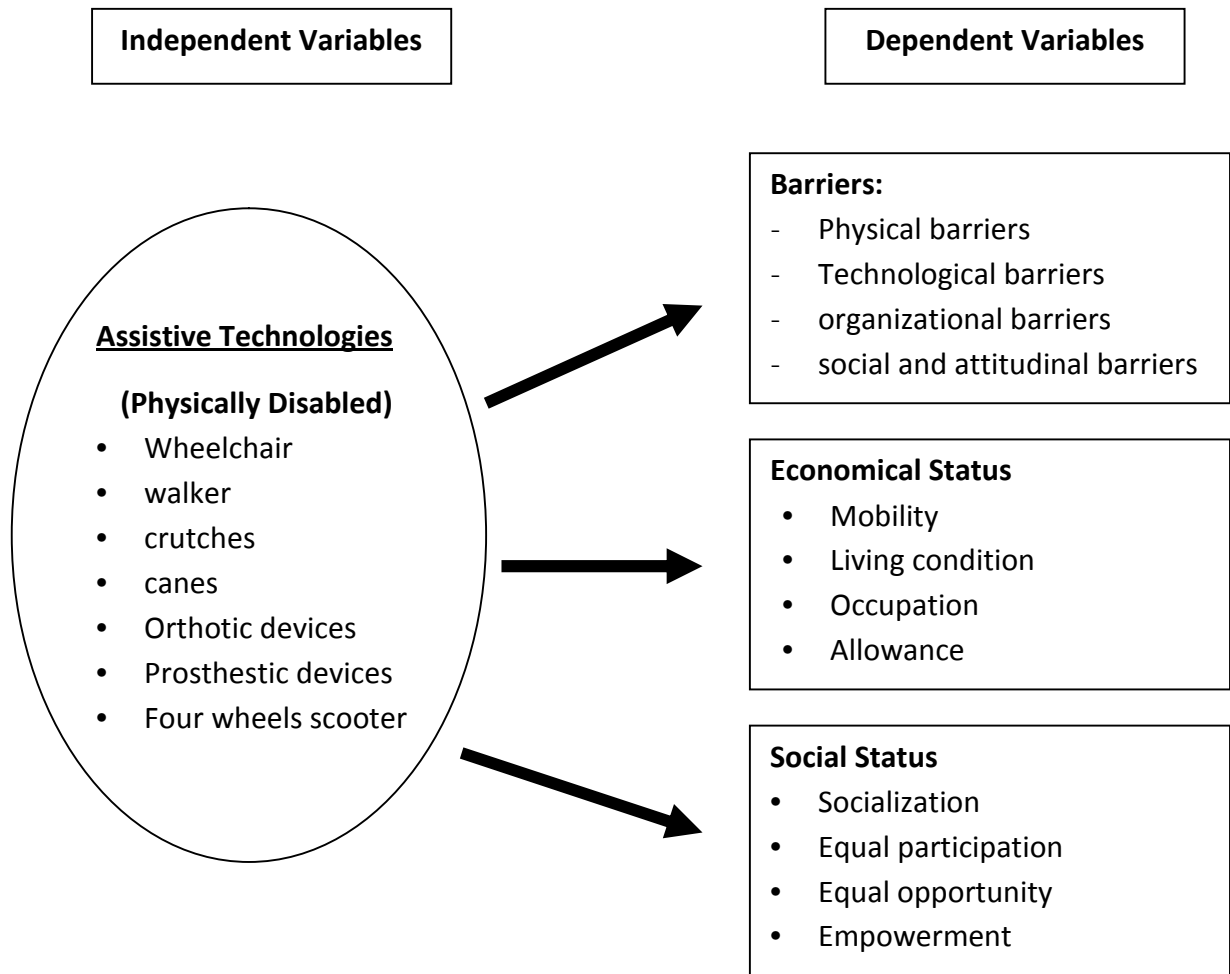
Silent suffering of people with disability physically disabled people and social barriers by Pusparaj Koirala thesis on Masters in Anthropology from Prithvi Narayan Campus (2016). The study is focus on the different barriers faced by physical group of PWDs and impacts of barriers in their life.

2.4 Conceptual Framework:

A conceptual framework represents the researcher's synthesis of literature on how to explain a phenomenon. It figures out the actions required in the course of the study given his/her previous knowledge of the researchers' point of view observations on the subject of research. In this research different types of Assistive technological (AT) that physically disabled people are using as independent variables. Different barriers, economic and social life are affected because of the AT therefore these phenomenon are dependent variables.

In this respect the conceptual framework for this study has been conceived as given below:

Figure 2.1 Conceptual framework of the study.

Independent Variables	Dependent Variables

Assistive Technologies

(Physically Disabled)
- Wheelchair
- walker
- crutches
- canes
- Orthotic devices
- Prosthestic devices
- Four wheels scooter

Barriers:
- Physical barriers
- Technological barriers
- organizational barriers
- social and attitudinal barriers

Economical Status
- Mobility
- Living condition
- Occupation
- Allowance

Social Status
- Socialization
- Equal participation
- Equal opportunity
- Empowerment

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Selection of the Study Area

Pokhara Lekhnath Metropolitan City. It is the provincial capital of Province number 4 headquarter of Gandaki Zone and Kaski District. It is located 200 kilometers (120 miles) west of the capital Kathmandu. Despite being a comparatively smaller valley than Kathmandu, its geography varies dramatically within just few kilometers from north to south. The altitude varies from 827 meters (2,713 feet) in the southern part to 1,740 meters (5,710 feet) in the north. The study site is located in Pokhara organizations of people with disability are located centrally. With the help of the organization individual responded were contacted and research was conducted.

3.2 Research Design

The study is based upon social economic aspects of disabled and how technology can help them to change their socio-economic status. The descriptive and explorative research design has employed to find impact of technology of disabled people. This study describes the situation of disabled and relation between disabled and technology. It explores the changes of disabled in social and economic status after using assistive technologies.

3.3 Nature and Sources of Data

For the fulfillment of the aim of this data research, both qualitative and quantitative data were collected. For quantitative data, the information about the number of disabled, types of disability, their income level, types of assistive technologies they using etc. Whereas from qualitative data the concept of disabled and disability regarding various aspects, concept of technology and assistive technology, situation of disabled friendly infrastructures, different barriers faced by people with disability etc. were included.

The data were collected both primary and secondary sources. The primary data were collected in the presence of the researcher oneself researching to research area. The techniques like interview schedule, questionnaire, observation; key information etc has been applied. For the secondary data collection, different types of Governments, NGOs and INGOs, books, journal, magazine, dissertation of formal students report has been consulted which was related to the subject matter and will be helpful for the research of this topic.

3.4 Universe and Sampling

Central Bureau of Statistics 2011 has shown that there are 9219 PWDs in Kaski District. Among the total disabled 3210 are the physical groups. Disabled Survey Report of 2009 has shown 1354 people are disabled in Pokhara lekhnath metropolitan city. There is no update of data after the disability survey.

There are few organizations functional in the disability sector. In this study the organization established for the physical group are selected. There are nine organizations who work for people with physically disabled. In this study researcher used convenience sampling method to select the organizations. The organization namely Independent Living Society Nepal (ILS-Nepal), Creative Disabled Society, Community Based Rehabilitation Service (CBRS) are selected. Convenience sampling method used to select the respondents for the research. There are 60 people from these organizations who are using different types of assistive technology. Total numbers of 45 physical disabled people were selected out of 60 from three organizations by convenience sampling method. There were 26 male and 19 female respondents in this study.

3.5 Data Collection Technique and Tools

These following techniques were used for the aim of this research analyzing:

⟩ **Observation:** As the research area it is the settlement area of the research. The research observes has been included as the data. Usually Qualitative data was included in it.

⟩ **Questionnaire:** the questionnaire schedule was prepared previously. Both open ended and closed ended question were included. This research oneself

must collected the answer because the same question was put forward by the concerned partly as interview.

) **Interview Schedule:** The same questions from questioner schedule put forwarded by the interview. Other related questions also asked except those questions in questioner schedule. The help of family has been taken if the intense in unable to answer.

) **Key Informant Interview:** This type of interview was informal and unpressured. This action used for the close analysis of reality of the data's collected through other process for this. The related place, the related offices, the representative and the affected person's family were consulted.

) **Focus Group Discussion:** a focus group discussion was also conducted in order to gain convenient information as well as to check the consistency in the data collected from field survey. This also helped to check the collected data for its reliability and validity. A semi-structured questionnaire was also used for this purpose.

3.6 Method of Data Analysis

The numerical and qualitative data were properly analyzed which will be as per the nature and aim of the research. Graphic, tabular presentation and proper method will be implemental for the easy understanding of data's proper editing, coding and tabulation will be done as per the aim of research.

3.6.1 Categorizing the Data

In this study both qualitative and quantitative data were collected and categorized these data on the basis of their nature. The result of case studies, focus group discussion and key information interview were categorized as qualitative data. Other structured answers were classified as quantitative.

3.6.2 Coding the Data

After collected everything needed the researcher set out the coding of the data. Researcher developed excels coding the data.

3.6.3 Tabulation and Charts

After coding data entry was done those data were presented in table. Researcher also developed chart of the data. Researcher tried to explain each tables and chart for easy understanding.

3.6.4 Interpretation

The most difficult part was interpretation of both qualitative and quantitative data. In some cases what table shows and what researcher observed were totally different. So the researcher had to check many times to where these two data agreed and where they did not.

CHAPTER FOUR

SOCIAL DEMOGRAPHY OF THE RESPONDENTS

This unit includes the socio demographic features of the respondent. It includes the age and sex backgrounds of respondents, disabled types, cast/ethnicity, education background, religious background, lifestyle of respondents.

4.1 Age and Sex Background of the Respondents

People of different age's group and sex are selected in the research. The figure 4.1 shown below illustrates the age and sex category of the responded in the research.

Table 4.1: Age and Sex Background of the Respondents

| Age Group	Frequency				Total	Percentage (%)
	Male	Percent	Female	Percent		
0-10	1	2.2	1	2.2	2	4.4
11-20	5	11.1	3	6.6	8	17.7
21-30	4	8.8	8	17.7	12	26.6
31-40	6	13.3	5	13.3	11	24.4
41-50	5	11.1	2	11.1	7	15.5
51-60	4	8.8	0	8.8	4	8.8
60+	1	2.2	0	2.2	1	2.2
Total	26	57.7	19	42.2	45	100.00

Source: Field Survey, 2017

Table 4.1 shows that there are many male respondents (57.7%) then females (42.2%). The highest percent of age group is 21-30 with 26.6 percent where male are 8.8 percent and female are 17.7 percent. Second highest percent of age group is 31-40 with 24.4 percent. The lowest percent is 2.2 of age group above 60 years with only one male respondent. The figure clearly shows that young, teenage and adults (age group between 11-50) are more involved with different organizations then old ages people.

4.2 Types of Disabilities of the Respondents

There is various kind of disabilities among them physical disabled group is selected for research. There are many physical disabled types or categories as well. Following figure illustrated different types of physical disabilities of respondents.

Figure 4.1: Types of Disability
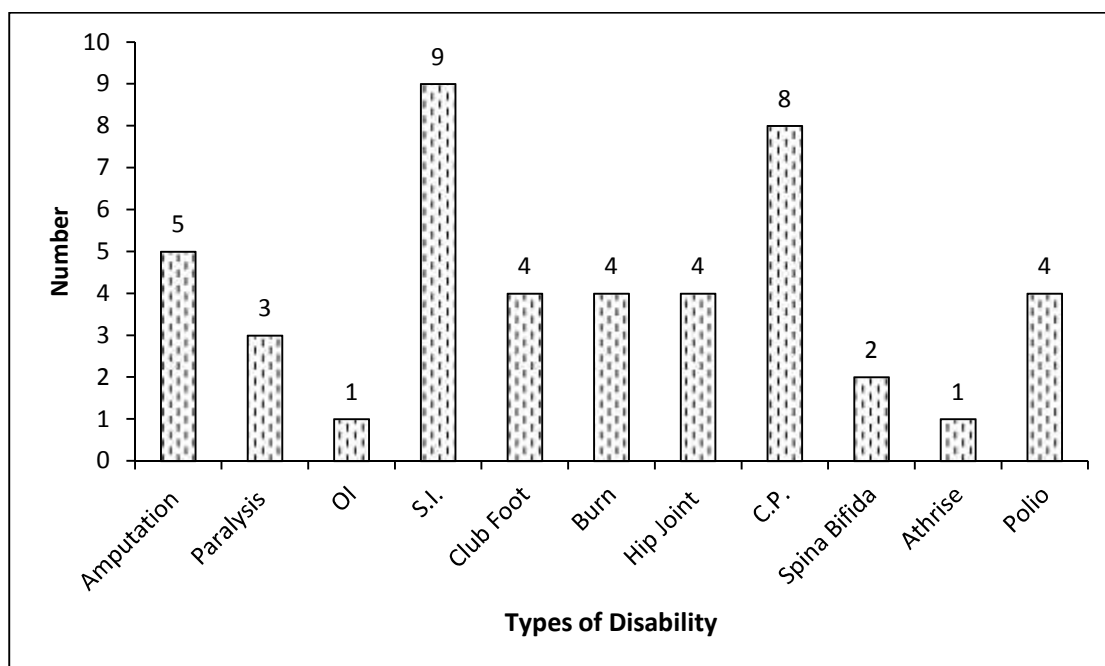
Source: Field Survey, 2017

Figure 4.1 illustrates that majority of respondents are S.I (Spinal Injury) with 9 in number and second highest is C.P (Cerebral Palsy) with 8 in number. Amputation group are third with 5 numbers. Burn, Club foot, Polio, and Hip joint problems group have 4 respondents. There are 3 respondents for Paralysis and 2 for Spinal Bifida. There are two single responded of OI (Osteogenesis Imperfecta) and Athrise.

4.3 Causes of Disability

Disability can occur in all ages, all sexes and all people who belong to different religious and cast group. It is either congenital or acquired due to accident, result of disease or causes of different medicines. In table no. 4.2 illustrates the disability causes of respondents.

Table 4.2: Causes of Disability

Causes	Frequency	Percentages (%)
By Birth	15	37.5
Accident	18	45
Illness or disease	7	17.5
Total	40	100.00

Source: Field survey, 2017

Table no. 4.2 clearly shows that 45 percent respondents got their disability by accidents, 37.5 percent respondents got their disability by birth and 17.5 percent respondent became disabled by illness or diseases.

4.4 Ethnic Composition of Respondents

Disability can happen to anyone, any sex, any age group or any ethnic groups. The research is conducted various cast group which are classified according to their ethnicity which is illustrated in the table below.

Table 4.3: Ethnicity of the Respondent

Ethnicity		Frequency	Percentage (%)
Ethnic Group	Gurung	7	15.5
	Magar	4	8.8
	Tamang	3	6.6
	Thakali	2	4.4
	Tharu	1	2.2
	Chhantyal	1	2.2
	Rai	2	4.4
Dalits		4	8.8
Brahmins		13	28.8
Chhetries		8	17.7
Total		45	100.00

Source: Field Survey, 2017

Table 4.3 shows that Ethnic group is higher in total 20, among them 7 Gurungs, 4 Magars, 3 Tamangs, 2 Thakalis, 1 Tharu, 1 Chhantyal and 2 Rais. Brahmins are 28.8 percent. Chhetries are 17.7 percent among 100 percent and Dalits respondents are very less with 8.8 percent. No any Mushlim background respondents have been fund during the research.

4.5 Education Background of the Respondents

Education is fundamental need of person after food, clothes and shelter. Going to school and college and gain education is very difficult for PWD, is not easy task for them. However with so many barriers and difficulties many of them manage to go to school, collage or different educational institutes. Following table illustrates the level of education of respondents.

**Table 4.4: Education Background**

Level of Education	Frequency	Percentage (%)
Illiterate	3	6.6
Literate	17	37.7
Primary	5	11.1
Below S.L.C	6	13.3
Higher Education (+2)	8	17.7
Bachelor	5	11.1
Masters	1	2.2
Total	45	100.00

Source: Field Survey, 2017

Table 4.4 shows that large percent of respondents are literate with 37.7 percent. Only one respondent is in Master Level. Only 5 (11.1%) above 45 are in their Bachelor level. +2 groups are second with 17.7 percent. Illiterate rate is 6.6 percent. 11.1 percent of them completed their primary level and could not continue their study. It's same happened with below S.L.C group with only 13.3 percent. Respondents below S.L.C, could not continue their study because lack of disabled friendly environments, people's attitude or poor economic condition.

## 4.6 Marital Status

Figure 4.2: Marital Status
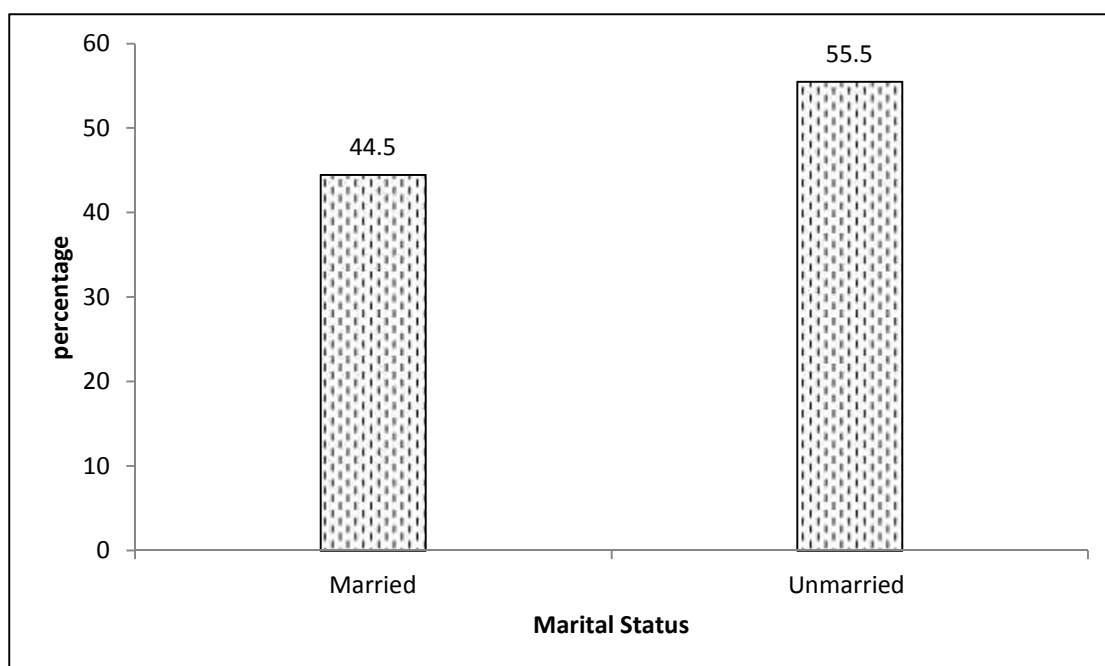
Source: Field Survey, 2017

The figure shows that 44.5% respondents are married and 55.5% respondents are unmarried. However must of the respondents are in their marriage age according to our society. In this research married person is almost half of all because most of the respondents got married before they get disability. Only few of them get married after disabled happen in their life.

4.7 Religious Background of the respondents

Religion is beliefs in supernatural power or power that control human destiny. Most of the respondents are Hindus with 62.2% and second group is Buddhist with 22.2% and Christian group is last with 15.5%. No any Mushlim and other relagious background respondents have been fund during the research. Figure 4.3 illustrated the religious background of the study.

Figure 4.3: Religious Background

Pie chart showing Religious Background with segments: Hindu 62.2, Buddhist 22.2, Christian 15.5.
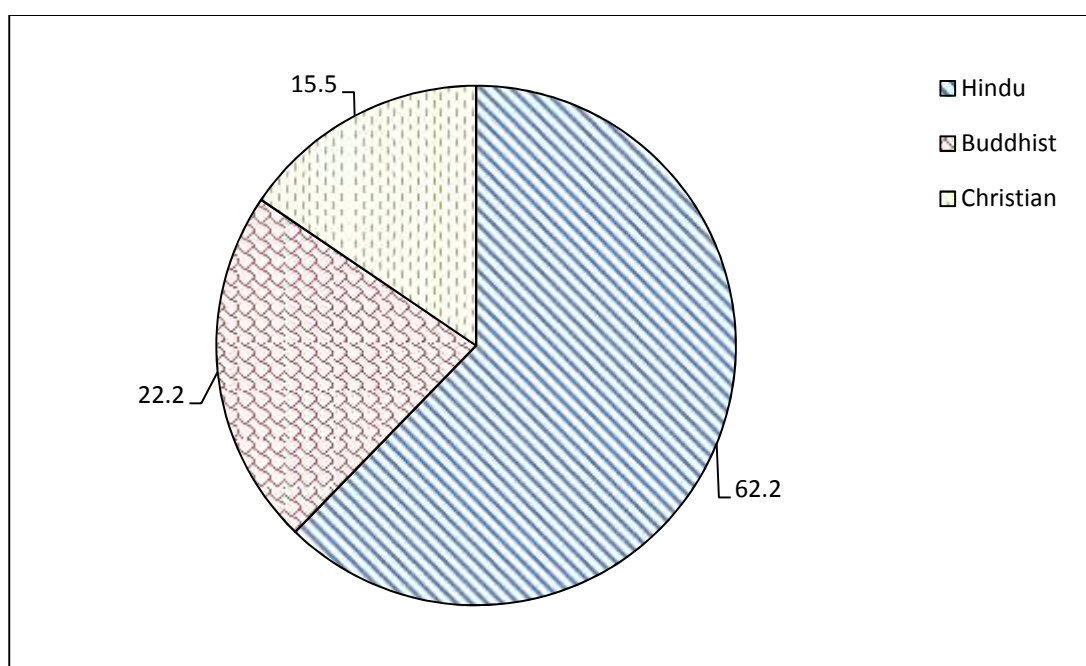
Source: Field Survey, 2017

4.8 Residential Background of the respondents

People migrate for different reasons. Some of migrate for better opportunities, better lifestyle, better facilities and some of migrate for different conditions. PWD face many difficulties and barriers in the village so they (must of the time their families too) have to migrate to the city either of treatment or easy transportations. Table no 4.5 shows the residential background of the respondents.

Table 4.5 Residential Background

| Residential background	Frequency	Percentage (%)
Migrants	37	82.2
Native	8	17.7
Total	45	100.00

Source: Field Survey, 2017

Table 4.5 illustrated that 82.2% respondents are migrated from different places to Pokhara valley. In other hand there are only seven (17.7 %) out of 45 are natives of

Pokhara valley. The disabled migrated after disabled happened on their life and remote area or villages are not easy place for them to live. Lack of treatment center or health center, lack of disabled friendly environment are the causes of migration of disabled people.

4.9 Living Condition of the respondents

In this research only 8 disabled people are natives and 37 are migrated from different places. In figure 4.4 illustrated the living condition of PWD.

Figure 4.4 Living Condition of the respondents
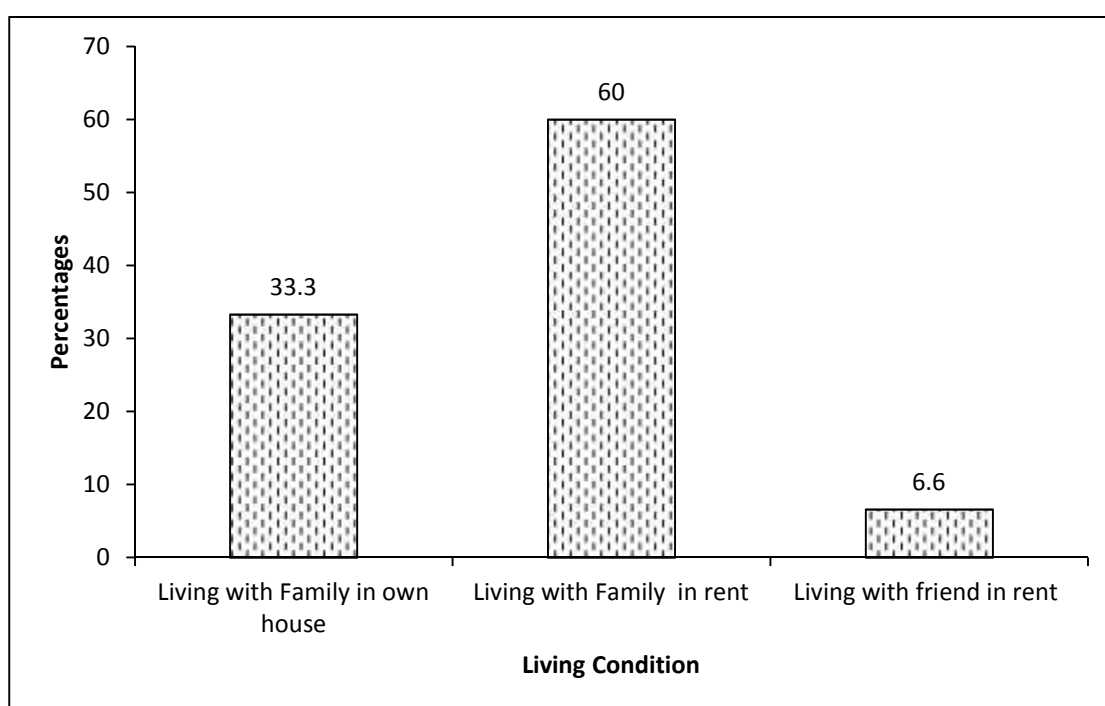
Source: Field Survey, 2017

In figure 4.4 we can see that 60 percent disabled people are living in rent with their families and 33.3 percent disabled people are living in their own house with their families. People who are natives they all have their own house to live with and some of the migrated also have their own house. In other hand only 6.6 percent disabled living with their friends in rent. There was no any respondent found who live in hostel or independently during research.

4.10 Occupational Background

Occupation is a job of profession or the activities in your life that you do to earn money. In this research found out the occupational background of the respondents and Table 4.6 sows the occupational background of respondents.

Table 4.6 Occupational Background of respondents

| Occupation	Frequency	Percentage (%)
Agriculture	3	6.6
Business	7	15.5
Self-Employed	5	11.1
Service (Gov. & Privet)	9	20
Social work	1	2.2
Labour	2	4.4
Does not have paying job	18	40
Total	45	100.00

Source: Field Survey, 2017

Table 4.6 shows that unemployed people are higher with 40 percent. They have to depend on their family for living because they are not able to work or not get any chance to work like other people. Services group (include government and privet sector) are second highest with 20 percent. 15.5 percent people are doing their business like glossary shop, vegetable shops. Self employed are 11.1 percent. Self-employed people had got training from different government or non government organization. They utilized their skills to make money. Only 3 people (6.6%) are involving agriculture based occupation. 2 people (4.4%) are labour and only one respondent found engaged on social work.

4.11 Driving License

Respondents who are using four wheels scooter they all have driving license. 18 respondents out of 45 have driving license for modified scooter/four wheel scooter.

Figure 4.5 : Driving license of respondents
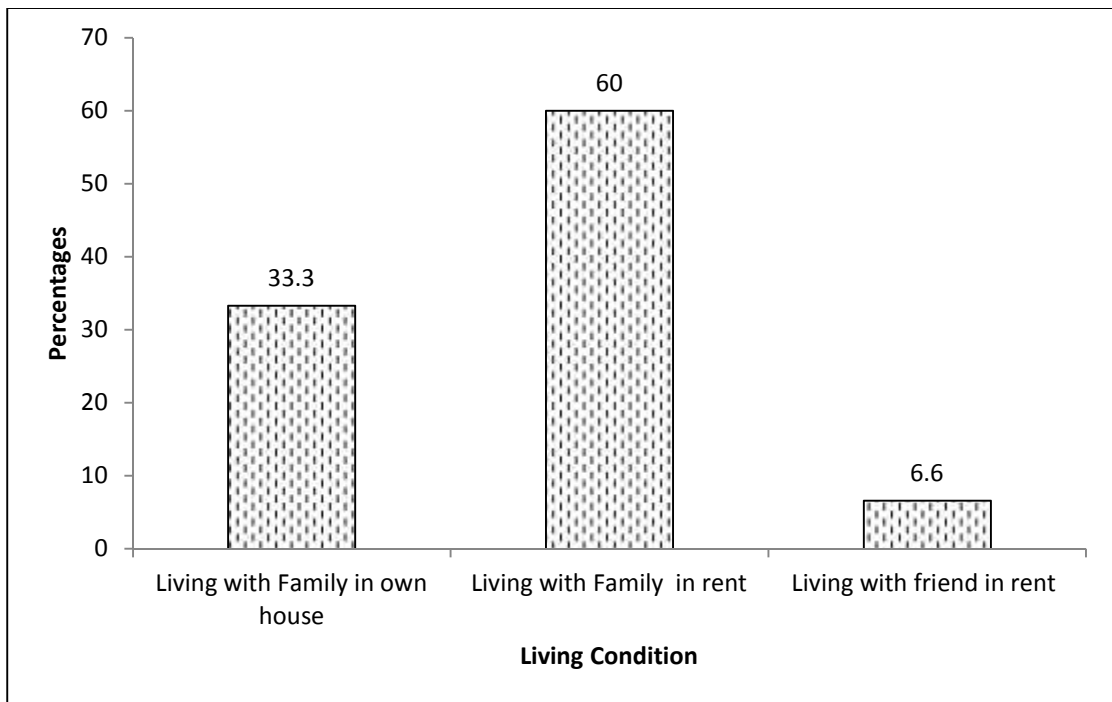
Source: Field Survey, 2017

Figure 4.5 shows that 18 respondents out of 45 using modified/four wheels scooter they all have their driving license.

CHAPTER FIVE

BARRIER FACED BY PEOPLE WITH DISABILITY

The chapter five is shows the story about daily activities of PWD. This chapter is divided into two topics. This chapter shows the different barriers in daily life of PWDs. Another topic shows the physical or architectural barriers of PWD.

5.1 Barriers faced by PWDs

People who use wheelchair or crutches, people with CP, People who are blind or have low vision, people who are deaf or hard to hearing, people with intellectual or development disability like down syndrome or autism, people with mental health problem and those with multiple disabilities live in every major cities, town and rural areas. PWDs always faced the barriers. From the time they get up till the time they go to the bed is a challenge. Those living with the disabilities commonly experienced different challenges or barriers on their day to day life. People with disabilities meet barriers of all types however these main barriers faced by physical disabled people described in the following sub-topics:

5.1.1 Physical barriers: Physical barriers are structural obstacles in natural or manmade environments that prevent or block mobility or access. The barriers related to elements such as the design of buildings, roads, footpaths any public places and private places. Steps, narrow doors, toilet and bathrooms, home appliances, slippery floors are the main physical barriers for people with disabilities. There are lots of barriers in the external and internal environment. For example somebody in the wheels wants to go out and access of pavement or footpath do not have curb ramps they are bullets and the spacing is not adequate. The illumination is not good and the surface is so round and uneven the one cannot maneuver the wheelchair on their own. Also there are issues for climbing up the buses. Without accessible ramps, accessible lifts, accessible toilets the disabled people cannot optimally utilizes.

5.1.2 Attitudinal barriers: Attitudinal barriers are the most basic and contribute to other barriers. For example, some people may not be aware that difficulties in getting

to or into a place can limit a person with a disability from participating in everyday life and common daily activities. Attitude is behaviors of people to another people or how people treat you. People with disabilities often faced attitudinal barriers through other people. These barriers often emerge from a lack of understanding, which can lead people to ignore, to judge or have misconceptions about a person with disabilities. People with disability are physically bullied, people stared them uncomfortably, treat as a subject of pity, people created different myths like it is bad sign to seen disabled person when you starting of any good work, they always come for donation or begging etc. Disabled people are more likely than people who are not disabled but the attitude of others as a major barrier to education, transport, leisure, access to public services, social contact and accessibility outside the house.

5.1.3 Social barriers: The relationship between disabled persons and the society has always had an ambivalent dimension. On one hand, the disabled depend on and appreciate the assistance of others in compensating for their handicaps, but, on the other hand, they often feel that the negative attitudes towards them held by society serve to increase their disabilities and enlarge their sense of powerlessness and dependence (Norman Coombs, 1991). Social barriers are related to the conditions in which people are born, grow, live, learn, work and age or social determinants of health that can contribute to decreased functioning among people with disabilities.

5.1.4 Organizational barriers: organizational barrier are policies, procedures or practices that unfairly discriminate and prevent individuals from participating fully in a situation. Policy barriers are frequently related to a lack of awareness or enforcement of existing laws and regulations that require programs and activities be accessible to people with disabilities. Denying qualified people with disabilities the opportunity to participate in or benefit from federally funded programs, services, or other benefits and the result is they have less experience about the priority in job or services in privet or government firms.

5.1.5 Technological barriers: The role of new technology in reducing the environmental and attitude barriers disabled people have commonly faced in the daily life. Technology is the technique, skills, method used in the production of goods or services such as scientific invention. People with disabilities face a variety of barriers to use different technologies. Assistive technology would be most helpful for a person

with a disability is usually made by the disabled person and his or her family and caregivers. Assistive technologies are for specific needs to help the person function more independently. But it can create unintentional barriers for some users. They are not affordable, unavailability, lack of information are the major barrier of using technologies for people with disabilities. Figure 5.1 illustrated the barriers faced by respondents.

Here figure 5.1 shows the different barriers faced by respondents most of them have a experiences of facing different barriers. 5 respondents out of 45 don't have any experience of social and attitudinal barriers is just because they don't care about what other people think.

Figure 5.1: Different barriers faced by respondents
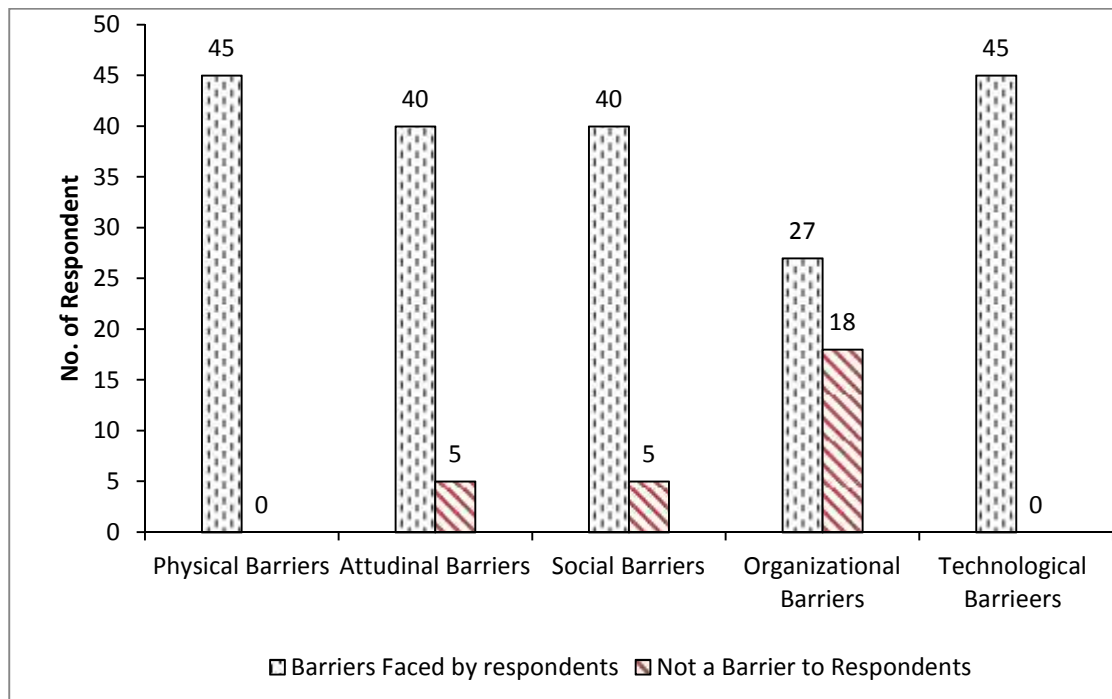
Source: Field Survey, 2017

5.2 Physical barriers everywhere (Common problems of the physically challenged)

More than 50,000 people live with a disability in Nepal. Among them there are many young women, men, kids and old ages. However their surrounding presents a number of obstacles that stop them from utilizing their abilities to the fullest. If you look

around, we'll realize a lot of places are not accessible for the disabled. Most of the public and the government building, hospitals and educational institutions are not accessible to the disabled in Pokhara. Infrastructure is the single biggest barriers in the lives of most people with disability.

"Disabled are not really the physical disability that wonders he/she has but it is the barriers that society creates to prevent a person from properly flourishing."- Hem Gurung (Secretary General of ILS)

Government and local organization will have to work together to construct physical infrastructure of public importance (tall and large buildings, cinema halls, banks, schools, hospitals, offices, streets and sidewalks, among others) While Nepal has taken some important steps to advance protection of the rights of PWDs on National Policy and Plan of Action on Disability, 2006.

The budget for the fiscal year 2016-2017 has a programmed to make public places friendly for people living with disability. However the apex court order of 2014 already decided to make public facilities including schools, banks and hospitals disabled-friendly (Kathmandu post, 2016). The government has much more to do ensure the right to an accessible environment for PWD. The different physical barriers faced by them are described in the following:

- **Kerbs and steps:** The governmental offices, public places or in their home PWDs have to faces steps or kerbs (stone edges to a raised path). The steps or kerbs in the entrance of buildings, stairways, toilets etc create trouble for PWDs.

- **Floors and paving:** Tiles are easy to clean so people often use in the floor. Public places like departmental stories, hospitals are using such slippery tiles. People who using crutches, canes, walker or standing frame are at the high risk to slip there. They fear often so feel like no going such places.

- **Doors and gates:** Width of doors or gates create obstacles for PWDs especially wheelchair users. The width of wheelchair and width of door in

most cases doors of intern or exit. Often doors are not accessible for wheelchairs.

⟩ **Toilet and washing facilities:** Generally the space in toilet and bathroom is kept less. The space there is regarded as waste of land and building area. There is no sufficient space for movements of wheelchair. The normal pan is difficult for PWDs to use. The level of floor and the pan is same it is difficult for PWDs to make position or sit there. Even commode toilets are not easy to use.

⟩ **Room appliances:** We often keep the room appliances at our easy access height. The kitchen almery, dining table set, electric switch, door locks and handle, cupboards, almery, kitchen table are usually at height. As PWDs position is sitting position on wheel chair their height will be less for reaching those room appliances. In the public places like bank, hospitals, other offices the counter are also at height.

⟩ **Public transportations:** PWDs have equal rights to travel and use public and private transportations but none of our transport systems are disabled friendly. There are no any Low floor buses, folding ramps, space for parking wheelchairs and safety belt to secure during journey in public or even private transportations.

Figure 5.2 shows the number of respondents who faced different physical barriers and who think   these are not barriers for them.

Figure: 5.2 Physical barriers faced by respondents
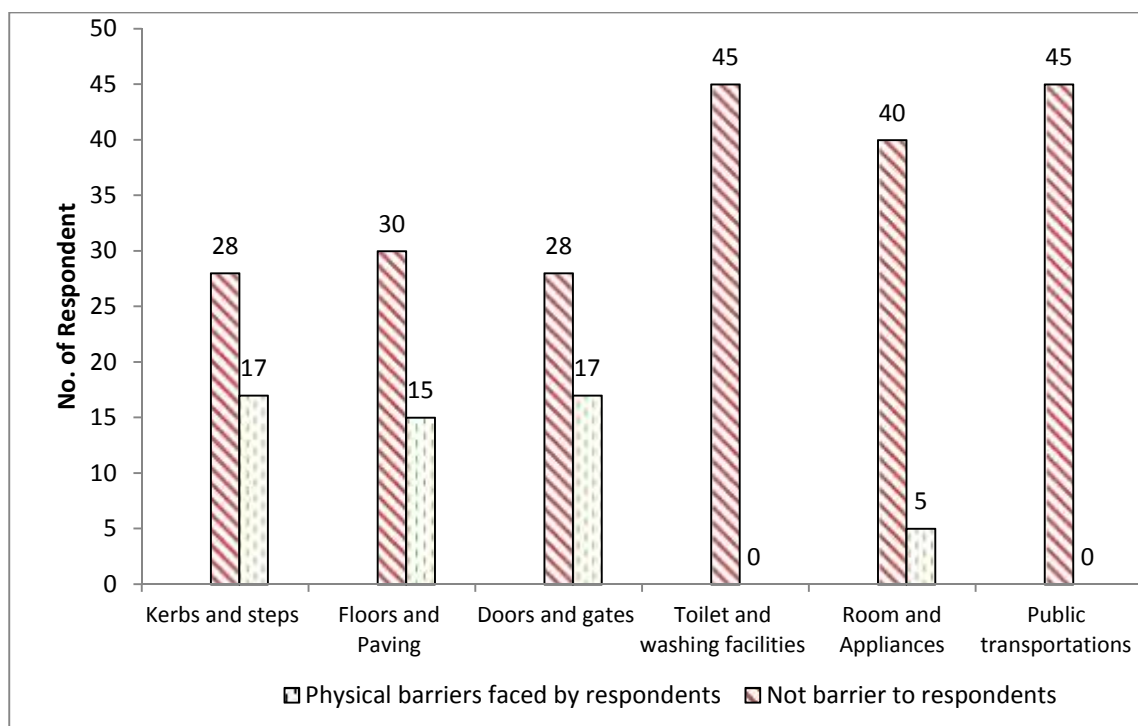
Source: Field Survey, 2017

5.2.1 Effects/impacts of Physical barriers

Physical barriers are elements of buildings or outdoor spaces that create barriers to PWDs. There life is affected by the barriers. These are the main impacts of physical barriers:

- The physical design of the cities is one factor leading to greater isolation. Barriers limited access into any infrastructures and reduced mobility thereby leaving people with disability isolated. They are often limited to their near surroundings. They are not able to go to the places of their interest.

- Physical barrier is one of the main reasons to loss of social relation of disabled people. This happens through a limitation of social participation and also through hampered relationship. They face much difficulty in achieve the governmental and nongovernmental facilities due to the physical barriers. Services provider do not pay much attention to them.

⟩ Physical barriers also the reason of negative emotional effects. Barriers can increase depression and they might feel weak and helpless. They likely expect to take control themselves.

⟩ Most of their choices have influence of their guardians as they are economically dependent upon their parents. They often need favor or need help form others to carry out regular activities due to the barriers.

⟩ They could not acquire the higher education of continue the further studies due to the barriers faces by them.

Case study 1

A difficult journey to the toilet. (Name and address changed)

I am Bindu Sharma. I am 24 years old. I was born in Syangja district and came to Pokhara after the spinal cord injury. I was 14 years old when I fell from the tree and got injured. I could not remember that time when I was hospitalizes but I can remember the first time my brother wheeling the wheelchair where I set. Time was passed and I used to use wheelchair but the place where I lived was not wheelchair accessible. I had to move Pokhara for accessible environment and for study as well. But when I want to go out there is always one problem came on my mind is toilet is not because I am disabled is because there is no public toilet that are disabled friendly. I think toilet is one of the basis need for humans after food, shelter and clothes. Like food is a need, toilet is also equally a need. There are no disabled friendly toilets therefore I have to hole urinating for almost hold day. When I am out with friends a have a nice time I have to return in the middle of the fun. Whenever I have to go out, I do not eat sufficient food and drink water so that I do not have to use the toilet often. I am a girl when I got my period thing will become more complicated. Those times I have to lock myself in my house I cannot go out. This is not only my problem is the problem of all disabled people. All the public places and toilets inside them must be made accessible to the PWDs.

CHAPTER SIX

ASSISTIVE TECHNOLOGY AND PEOPLE WITH DISABILITY

Chapter six shows the relationship of Assistive Technology and people with disability. This chapter deals about the history of AT. The chapter is divided into four topics, information about AT, respondent's level of information about AT, information about respondents AT and respondents satisfaction level of AT.

6.1 Assistive Technology

Assistive technology (AT) describes any device or other solution that is used by people with disabilities to assist in performing task or activities. AT refers to any item, piece of equipment or system whether acquired commercially, modified or customized that is commonly used to increase maintain or improve functional capabilities of individuals with disabilities. (Il w and C. Sellers, 2010)

AT that can help PWD to do something they could not do otherwise, like walking, running, communicating and more. The helpful tools as common as glasses that make it possible for a person with blurry vision to read or write. Whether people young or old, male or female, whether people had a disability from birth or developed one over the year AT can help the to live their life as they want. Many disabled persons see the possibility of a new access to opportunity and an exciting personal independence in the near future.

I asked all responded about what keeps them from participating in daily life? What is it that prevents them from going out? The most chosen choices are assistive devices and their disability. The number one choice was the assistive devices. Assistive technologies keep them from going out not the facts that they couldn't move their leg or weak body parts.

6.1.1 Types of assistive technological devices for physically disabled people

) **Wheelchair:** wheelchair is chair fitted with wheels for uses as a means of transport by a person who is unable to walk as a result of illness, injury or disability. Wheelchair is one of the main assistive devices for physically

disabled people. There are many types of wheelchairs but generally there are two types of wheelchair and they are:

A) Manual Wheelchair: Manual wheelchair are those wheelchair where person sitting on the chair and turning the wheels with their hands or someone else push the chair by the handle from behind. Manual wheelchair are often light weight and easy to transport.

B) Electric Wheelchair: Eclectic wheelchairs are work by batteries and do not require any helpers and travel a lot faster than manual wheelchair. Electric wheelchairs are considerably more expensive than manual wheelchairs and can be difficult to transport them in vehicle.

⟩ **Walker or Walker frame:** Walker or walker frame is tool for disabled or elders people who need additional support to maintain balance or stability walking.

⟩ **Crutches:** Crutches is a walking aid that transfers weight from the leg to upper body. People who cannot walk without any support are usually use crutches.

⟩ **Canes:** Cane is a walking stick that often has a curved handle and help people to stand and walk. A strong, light weight support stick used as crutches.

⟩ **Orthotic devices:** Orthotic device is a supporting brace used support or correct the function of movable parts of the body. Ankle braces that allow a person to stand, wrist braces, arm braces, heel caste they all help who have pain or difficulty with basic movement to able to do daily activities normally again.

⟩ **Prosthetic devices:** Prosthetic devices are fake body parts. This is an artificial device that replaces a missing part which may be lost through disease, accident and any other reason.

⟩ **Four wheels scooter:** There are varieties of scooters for people who are disabled that can make their transportation much easier. In Nepal we can see four wheels scooter which was modified from normal two wheels scooter.

6.2 Types of Assistive technological devices (ATD)that respondents are using

There are 11 types of physical disabled group of this study and they are using different types of ATDs. Here table no. 6.1 shows the types of disability and what ATDs they are using. Table also illustrated the frequency of respondent who are using only one, two or more than two ATDs.

Table no: 6.1 Types of Assistive technological devices that respondents are using

| Types of Disability	Types of AT						
	Wheelchair	Walker	Crutches	Canes	O.D	P.D	Scooter
Amputation (5)	5		2			2	3
Paralysis (3)	2		1	1			
O.I (1)	1						
S.I (9)	9						8
Club Foot (4)					4		
Burn (4)	1		2			2	2
Hip joint (4)				4			
C.P (8)	6	4					
Spina Bifida (2)	2						
Athrise (1)	1						
Polio (4)		2	2				1
Total	27	6	7	5	4	4	14

Source: Field survey, 2017

There are 5 respondents who have Amputation and all of them use wheelchair, 3 of them also use four wheelchair scooters and 2 of them use crutches only 2 respondents use prosthetic devices from Amputation group. There are 3 respondents having paralysis and 2 of them use wheelchair, 1 on of them use crutches and 1 of them use cane. Osteogenesis Imperfecta (O.I), Club foot, Hip joint problem, Spinal bifida and Athrise group are using only one type of ATDs. Respondent who has O.I is only using wheelchair and same as respondent who has Athrise. There are 4 respondent having

Hip joint problem all of them using canes as a ATDs. All of the Club foot group using orthotic devices. 2 respondents who have Spinal bifida both are using wheelchair.

6.3 Respondent's level of information about Assistive Technological Devices

Some of respondents have full information about AT and most of them have less information about it. However they are using AT they have less information about it, they cannot defined what is AT and what its works. Following figure clearly shows the information level of AT according to respondents.

Figure 6.1: Respondent's level of information about AT
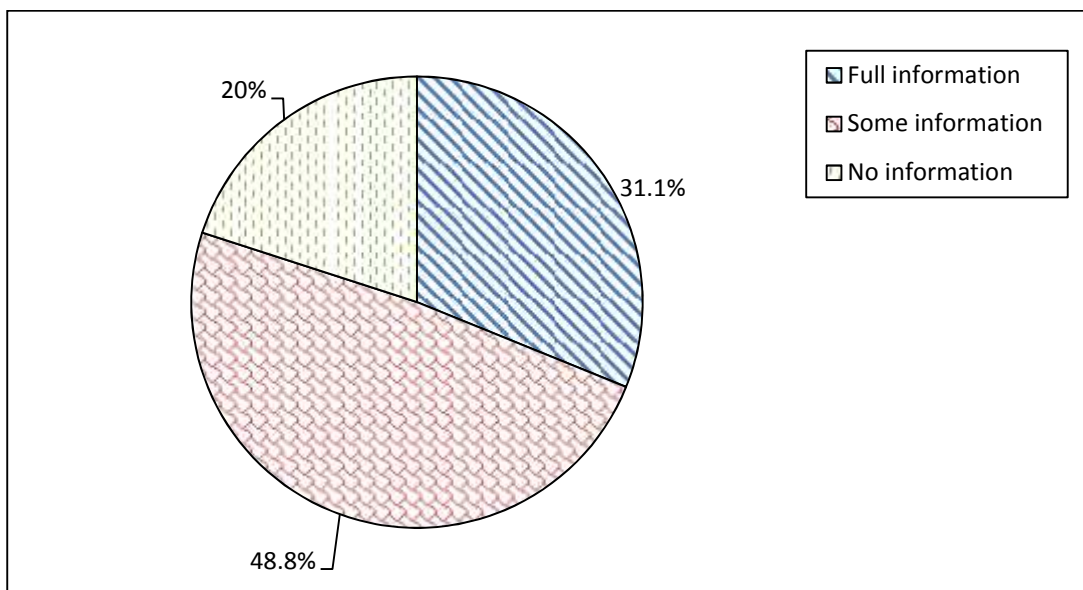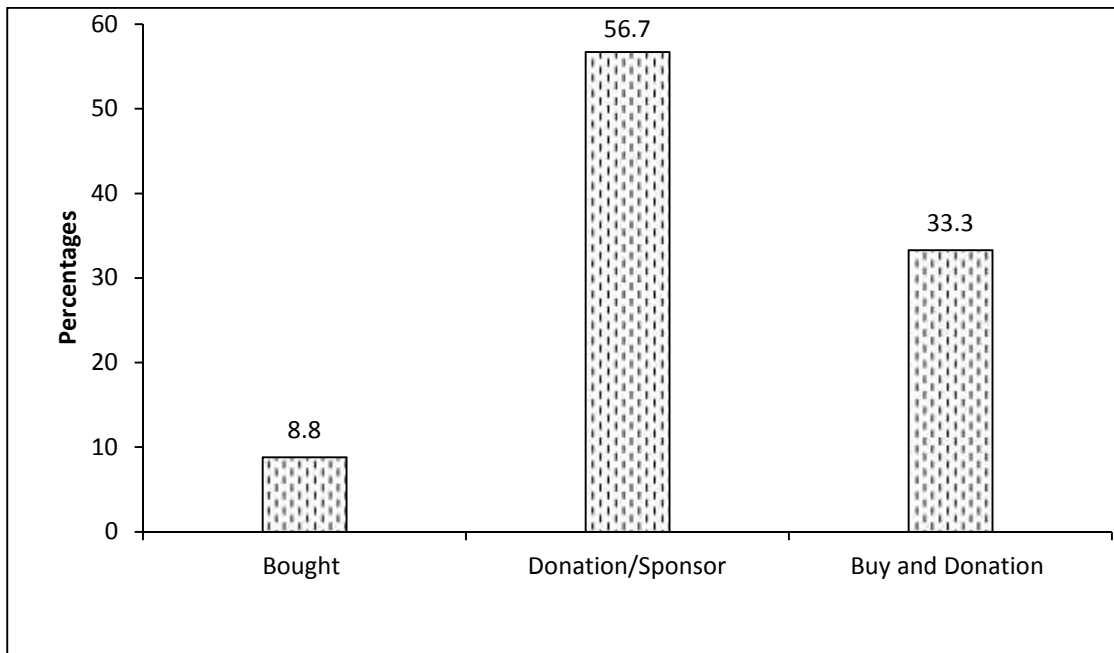

Source: Field survey, 2017

Figure 6.1 illustrated that 31.1 present respondents have fully information about Assistive technological devices and how to use them. 48.8 present respondents have some or basic information about Assistive technological devices. However other 20 present people also using different types of Assistive technological devices they have not any information about them. Their ages (too young or old to understand) and level of education are causes of their level of information about AT.

6.4 Sources of Assistive Technological devices

The Government has taken no initiatives in manufacturing and distributing assistive devices. As a result, all the modern assistive devices are imported and distributed

occasionally as charity objects. Although GoN via five physical rehabilitation centers established in the five developmental regions are distributing a few number of assistive devices, INGOs/NGOs are the main supplier in Nepal (Eide Arne H. And friend 2016). Figure no. 6.2 illustration the sources of assistive devices that respondent are using.

Figure 6.2: Sources of ATD

Field survey, 2017

Figure 6.2 shows that 8.8 present of respondents bought their own AT and 56.7 present respondents got form donation or sponsor from different government or non government organizations. Because some of respondents using more than one AT, 33.3 present respondents bought some and they got from donation also.

6.5 Respondents Level of Satisfaction/Content Level

The main focus group of this research is PWDs who using different ATDs therefore all respondents using different types of ATs. Table no. 6.3 shows that the level of satisfaction of respondent after using ATDs.

Table 6.2: Respondents level of Satisfaction/Content Level

Level of Content	Frequency	Percentage (%)
Not content	2	4.4
Less content	12	26.6
Content	23	51.1
Very content	8	17.7
Total	45	100

Source: Field survey, 2017

We can see on table no. 6.2 that 51.1 present respondents are content on their ATDs 26.6 present respondents are less content; very content people are 17.7 present. There are 2 (4.4%) respondents are not content. the two respondents who are not satisfy because they want more verity of ATDs to make their life easier, what they have is not helping them to do their daily works.

6.6 Barriers of using Assistive technological devices

All 45 respondents faced different problems when they get devices. Even many of them got from donors or sponsored but still that's not enough for them to make their life easier, all of them want more advanced devices. Table no 6.3 illustrated the main problems to get assistive devices for respondents.

Table 6.3: Problems to got Devices

Problems	Frequency	Presents
Expensive/ not affordable	17	37.7
Unavailable	20	44.4
Lack of information	8	17.77
Total	45	100

Source: Field survey, 2017

Table no. 6.3 shows 37.7 present respondent thought that the main problems to get assistive devices was their cost. Many assistive devices are expensive and not affordable for them. Many of the respondents have to dependent economically on their families so that was quite obvious problem to get assistive devices. In other hand 44.4 present respondents thought unavailability was the main problem to get assistive

devices. There are so many devices were developed but only handful devices made in local level. If they wanted advanced devices like electronic wheelchair, prosthetic devices they have to import from abroad. People who have lake information about assistive devices they didn't even know what type of devices were suitable for them. Most of the young and old aged respondents were into this group.

Case Study 2

Problem to get devices. (Story of one leg boy, Name and address changed)

My name is Puran lama and I am 15 years old. I have only one leg. When I was 4 or 5 months old I had burn by faire. My right leg was damaged and I had to cut my right leg. My family lived in syangja district and sifted Pokhara when I was 10 years old. They decided to live here for better future of mine and my other sibling.

When I was little my mother and father used to carry me most of the time wherever they go out because they could not afforded to buy any supportive devices for me like prosthetic leg or crutches. I used to stay home all the time; my two sisters were my friends. My father made strong stick for me but that was not comfortable for me to carry my whole body with one leg. I jumped for walking. When I was 8 I saw wheelchair on TV I did not even a clue there was a special chair with wheels and then after I saw prosthetic devices on same TV program. There was a man who used artificial leg. He was just like me but he had one artificial leg, he could use it like his own leg. I used to dreaming about my artificial leg after I saw that. My father got job in Pokhara city. He bought me a pair of crutches when he returned I used crutches for a while but as time went on it became painful to bear weight my one leg. Then after my family sifted Pokhara, My father somehow managed to bring me prosthetic leg when I was 11 but it did not fitted properly and was uncomfortable and again I forced myself to use my old crutches. We had not enough money to buy new prosthetic limb. After that one organization who works for disabled people donated me new prosthetic limb with the help of that I can walk but could not bends my knee, I am still using this prosthetic limb but still waiting for better limb to make me feel more comfortable.

Technologies have a vital role in boosting morale and motivation of the disables. Use of Assistive technological devices needs assessment, selection, fitting, training and follow-up to ensure safe and efficient use Availability of AT is achieved by ensuring the infrastructures, personnel, products and materials are available. Providing of AT entails design, production, supply of products and delivery of associated services. AT should meet user needs and environmental condition, be available in the country and

be obtained and maintained with services sustained and most economical and affordable price (Barg Johan and friends, 2009). There are numerous barriers in using assistive technology by individuals. Here are the main barriers of using Assistive technologies:

-) One of the main barriers in accessing assistive technology in less resourced settings is the lack of funds. Limited financial resources in many countries have a major impact on availability and accessibility of assistive technology (WHO 2011a).
-) Lack of worker with proper training in appropriate mobility device services is also a major barrier.
-) Lack of barrier free infrastructures or disabled friendly infrastructures.
-) Cultural and social stigma in using assistive technologies.
-) Persons with physical disabilities have to adjust psychologically at the point of their first instance of using assistive devices and their emotional attachment with it.
-) Inadequacy of knowledge on newer ATs.
-) Lack of qualities of devices.

In Pokhara, non-governmental organizations, charity organizations and welfare foundations are found who donated or sponsored assistive devices for people with physical disabled. Many respondents of this research got their devices by donors or sponsored. Few of them bought their devices. Devices like wheelchairs, four wheels scooters are not manufactures in Nepal. Have to import from abroad or have to depend upon donors. Devices like crouches, canes, arch, walking/standing frames etc are made in local level by using local materials. But even some organization made such devices not enough for people who needed the most. Only few organizations play role as a devices maker and distributer whereas, different health institutions made devices for their benefits or as a business.

6.7 Universal design or universal Access

Globally, there is a concept called Universal Design, a design that is usable to the greatest extent possible by everyone, regardless of age, ability, or situation.

Universal design is an approach to design that works to ensure products and buildings can be used by virtually everyone, regardless of their level of ability or disability the term "universal design" was coined by the fellow of the American Institute of Architects Ronald L. Mace. Universal design refers to board spectrum ideas meant to produce building, products an environment that are inherently accessible to people without disability and people with disability. Installing standard electrical receptacles higher than usual above the floor so they are easy reach of everyone, selection wider doors, making flat entrances, installing handles for twisting to operate such as loop handles, Storage space within reach of both short and tall people are some example of Universal design.

Universal design is simple designing all products buildings and exterior space to be usable by all people. Universal design is not a design style but an orientation to design. University design follows the principle of flexibility. It is important that the design is flexible enough to apply all different kind of people who have huge varieties of abilities or disabilities. Not only people with disability can get benefits from them it everyone benefits from it.

There are many laws in Nepal that are in favor of people with disabilities, but the law enforcement isn't strong enough. Universal Design is the very basis for empowerment of persons with disabilities and it is a long battle ahead. Although Pokhara is one of the most developed area of Nepal, most of the public places such as road, sidewalks, parks, market, airport, open spaces, religious and touristic places, educational institutions, bus parks, and government buildings are not accessible for all including persons with disabilities.

Currently, NFD-N (National Federation of the Disabled-Nepal), in partnership with CBM Nepal, has been implementing a multi-years project focusing on accessibility entitling "Accessibility for Inclusion" to the end of inclusion of persons with disabilities for the period of 2016-18. The direct beneficiaries of the proposed project are persons with disabilities who are facing different types of barriers for getting access to basic services, human rights and opportunities due to the inaccessible public physical infrastructures (NFDN, 12/2017). But the project mainly focuses in Kathmandu metropolitan city. Following the principles of universal design and ensuring the accessibility standards are the new things for Nepal. So it will take time to increase the concepts and follow the principles of universal design.

CHAPTER SEVEN

IMPACT OF ASSISTIVE TECHNOLOGY ON SOCIAL AND ECONOMIC LIFE

This chapter seven deals about the social and economic life status of people with disability. This is the chapter the researcher tried to find out the different in experience of people with disability before and after using the assistive technological devices. Follow chapter has two different topics. Social and economical life of respondents and each topic has sub topics.

7.1 Social life

So many of life depends on our social bonds. Going to school, farming relationships, earning an income, taking part in recreational activities and contributing to our community and culture. When people with disabilities are excluded from all this, it's much harder for them. When a society recognizes any physical or mental condition as a disability it accepts by implication. Disabled person in Nepal have lack asses to basis amenities such as education material in an accessible format, accessible medical prescriptions etc. Having a family member with some kind of disability can have an effect on the entire family, the parents, siblings, and extended family members. The time and financial costs, physical and emotional demands, caring for a disabled child/adult can have far-reaching effects. Their families and caregivers also go through lot of stress and challenges in having a person with disability at home. For families, caring for a disabled family member may increase stress, take a toll on mental and physical health, decisions about work, education/training, having additional children, and facing the social and public opinions. Sometimes family members may feel ashamed and discourage or forbid social interaction, and there is the stigma and misconception surrounding disability, which can also get in the way of participation.

Being welcomed into society, giving the opportunity to make friends, find employment and participate as equal member of community gives people with disability confidence, the chance to earn an income and strengthened social connections. Communities that include people with disability also gain the huge

benefits of the active and valuable contributions of these people and their families. In this topic shows the social status of respondents, social reason for facing difficulties and their life before and after using Assistive technological devices.

7.1.1 Socialization become challenging prospect

Often, individuals with disabilities are isolated, whether because of physical, intellectual or emotional reasons. But socializing, being part of a group, and making friends adds a rich dimension to our lives, and having a disability shouldn't preclude anyone from enjoying a social life. The greatest challenge that disabled people have had to face has been society's misperception that they are the "breed apart". Historically they have been pitied, ignored, vilified-even hidden away in institutions. (C.Gobalakrishnan, 2013). In other hand there are often physical barriers to become socially participate for people with disabilities, Inaccessible transport, building, community centers, sporting venues and business. A physical impairment that make accessing social venues and taking part in certain social activities difficult. Socializing became a challenging prospect. In the public places, with relatives, in work places every disabled person might be experienced the challenge of socialization.

Many people in focus group dissection for this research admitted that they have actually avoided talking to a disabled person because they were not sure how to communicate with them. Disabled respondent's and their families tell scoop that negative attitudes affect every area of their lives such as in the playground, at work, in shop, on the streets etc. Much of the discomfort people feel about disability may stem from lack of understanding. Not enough people know a disabled person and may are concerned that they will do or say the wrong thing when talking to disabled people or about disability.

These are the main reasons for create difficulties to become socialized:

) **People's attitude:** Disabled people continue to face challenges in many areas of their lives and many of these challenges involve people's attitudes. The view of society that persons with disabilities were unhealthy, defective and deviant. Society treated disabled people as objects of fear and pity. People things disabled people are less capable then non disabled people in need of care, and dependent on other. Disabled people always thought they are treated differently so people with disability often felt lonely and negative.

) **Lack of associability:** public places, accommodation, transport systems and information are often inaccessible. Lack of access to transport is a frequent reason for a person with a disability being discouraged from seeking work or prevented from accessing health care. Their disability has limited their ability to go to public places, social functions. They need support and help from other to do daily activities. For physical disabled physical barriers often create barriers physical barriers related to elements such as the design of buildings, roads, footpaths any public places and private places. Steps, narrow doors, toilet and bathrooms, home appliances, slippery floors are the main physical barriers for people with disabilities. Without accessible ramps, accessible lifts, accessible toilets the disabled people cannot optimally utilizes. Physical barriers also create the fear of accidents. People with disability often have fear of accidents when they are going out or even their house.

) **Lack of provision of service**: People with disabilities are particularly vulnerable to lack in services such as health care, rehabilitation, or support and assistance. People with disabilities said that they had trouble accessing healthcare facilities and services in part due to lack of access to adequate rehabilitation devices and services.

) **Lack of proper monitoring, no punishment or reward system:**
Barriers to participation need to be identified and removed, possibly requiring changes to laws, policies, institutions, and environments.

Figure 7.1 illustrated the Respondent agree or disagree opinion on the specific causes of difficulties.

Figure no: 7.1 Causes of facing difficulties
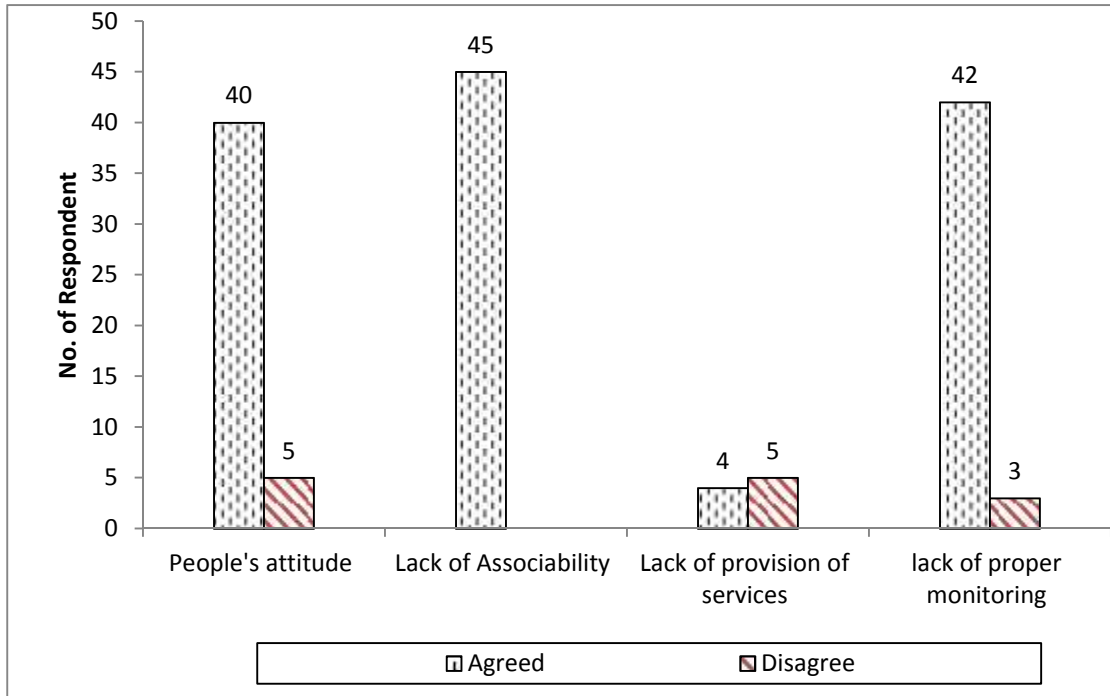
Source: Field survey, 2017

7.1.2 Social life after using Assistive technological devices

Most of the respondent felt themselves as inferior compared to able. They thought they are physically wearer and could not compete with able in any sector. Most of them were limited under their room or home. They had to face many troubles to go to school, go to any social functions. They had to depend upon their parents or friends to go to anywhere. They cannot continue their study because of the different barriers. They had very limited person to contact just because they did not get any facilities, they wanted to isolate themselves.

The changes going to be presented here is about the change in perception, experiences of people with disability after using assistive devices. Many types of devices help disabled people in their daily life such as dressing, cooking, cleaning etc. as well in social life such as shopping, going out with their families and friends. Most of the respondents felt their confident level increased. Their friend circle and public relation

increased due to networking with other disabled people. Even there are many physical barriers to use assistive devices, respondents found many changes on their lives.

How Assistive devices help disabled people to involve in social work or activities.

-) Able to care themselves, no need for help from their family or friends on daily activities.
-) Help to live independently
-) Help to become employed
-) Participant fully in communities
-) Easy transportation
-) Lack of accidents
-) Help to learn in school and other educational institutions.
-) Self-motivated

Figure: 7.2 Social Condition of respondents after using ATDs
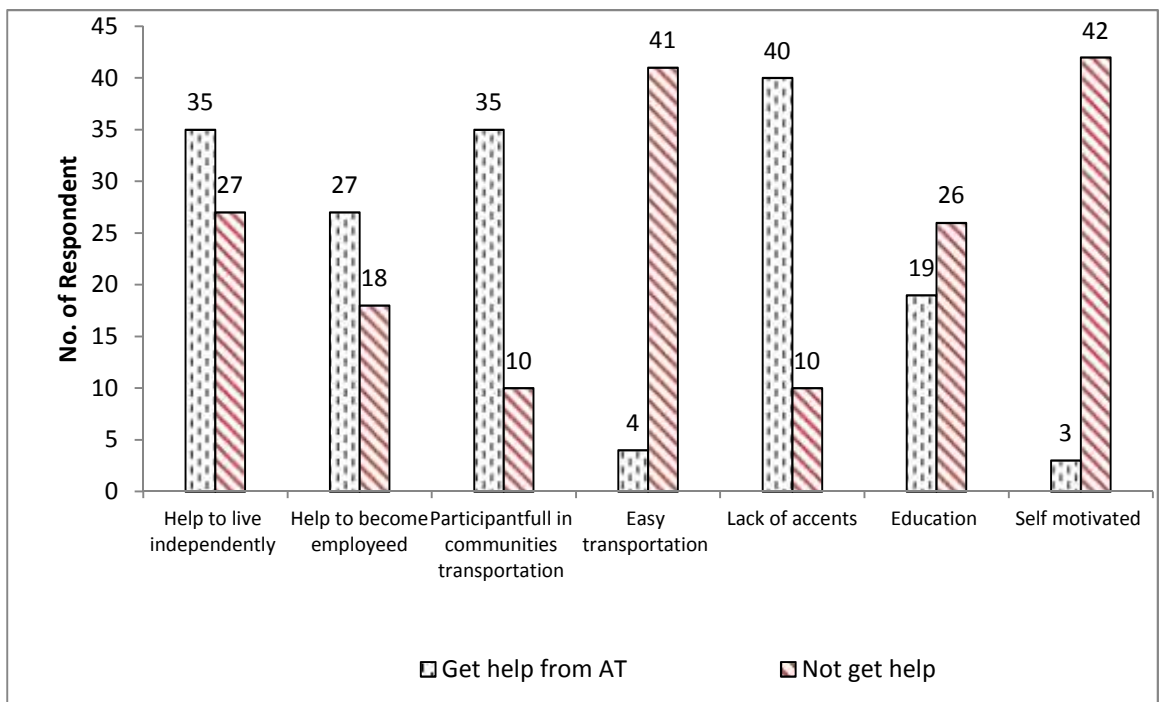
Source: Field survey, 2017

Case study 3

My Life with wheelchair (Name and address changed)

My name is Mamita kc and I am 28 years old. I have bone disorder Osteogenesis Imperfecta (a condition causing brittle bone and stunted growth), I was born with it. My older sister was also like me but she passed away. It is something not very common it is pretty rare type of disability. I have so many breaks and sprains in my life. I have a scoliosis (curved spine). A lot of people don't know what is it and look at me and assume I am not normal. In school age my mom carried me to school as there was no wheelchair. She carried me to school till class 12. Sometime I had to walk myself but I had to take rest for a week if I walked for so long.

I was always thinking about my future and wanted to work or doing something like other people. I got wheelchair after I selected in TSDCBD for skills trainings. I came to Pokhara and joined bachelors. I was the first disabled girl stay in hostel but I never attend class because classes were not disabled friendly. I got an opportunity to work in NGO as program assistant and got a chance to joined leadership program from DUSKIN, Japan among disabled person from Nepal. Now I am treasurer of ILS-Nepal.

During my life journey I got whatever I wanted in my life even I am little different from others but my dreams and my aim are not different. Wining this time I always have my wheelchair. I am using electronic wheelchair. I cannot walk very far because my bone will tire and hurt. It's so helpful I don't know what I would do if I did not have it. There are so many benefits for being wheelchair. It gives me a numerous advantages to make daily activities faster, simple, and eventually a lot more fun. However there are lack of disabled friendly infrastructures in Pokhara but without any wheelchair, churches and any other assistive devices I might be stay at home all the time not reached my goals in life. My friend and family members still have to expect to work as they want. I still expected to work in kitchen and clean up like other family members. My family does not treat me as someone with special needs.

Disabled are not really the physical disability that wonders he/she has but it is the barriers that society creates to prevent a person from properly flourishing.

Case study 4

Wheelchair Basketball player (Name and address changed)

My name is Ram Kumar and I am 24 years old. I have got spinal cord injured. When I was 14 I fall from the tree and injured. That was the most difficult time of my life to know that I would never walk again. I had to re-learn to live to move in wheelchair.

I found wheelchair basketball when I was 20. This is amazing I could not believe people with wheels can play basketball. There are so many opportunities for people with wheelchair I did not know about. When I stated to play basketball I felt free and my all fears were run away.

I am a member of ILS-Nepal and I play basketball for this organization. Our organization often organized wheelchair basketball tournaments nationally and internationally as well. I am the shooting guard and small forward of our play team. We won national championship for 2 times and got second position on international championship.

I put a lot of energy into become the best wheelchair basketball player that I could. Without sport I would not have got to meet people in the same situation as me, that were doing so much better than me that I learnt from. I think wheelchair basketball really helps people to look forward and appreciate what they have got. You know how some people are like take it easy because I am in a wheelchair. You actually had to go harder with me because I am a really athletic guy. I am really lucky to have the friends that I have because they never took it easy on me at all, In fact, if there was a way they could absolutely dominate me or just completely take advantage of a weakness they would do it. They didn't look down on me.

I believe there are lots of challenges in people's life. It does not mean you could not face of it.

7.2 Economic life:

According to the UN 2011 world report on disability in developing countries about 80% living with disabilities of work age are unemployed. The right to work is

frequently denied to them. Everyone is struggling for employment or for a job but there are always different stories of the person who has some of disability. People with disabilities face enormous attitudinal physical and informational barriers to equal opportunities in the work. It is really hard to get any job for people with disabilities and other hand if they are involved in any work or job they haven't treated an equal basis. There four many people with disabilities have to dependent finically into their families. In this topic sows the economical status of respondents and their economic life before and after using Assistive technological devices.

7.2.1 Economical status of responded

In this research 40 present respondents (18 out of 45) does not have any paying job, they have to depend on their family for living because they are not able to work or not get any chance to work like other people. Other 60 present Respondents are involved in some kind of work or employments. Table no 7.2.1 shows the income level of respondents. Respondents who are unemployed illustrated their families' income without adding their monthly allowances.

Table no. 7.1: Income level of respondents

| Income per months (Thousand)	Family		Individual		Total	Percentage (%)
	Frequency	Percent	Frequency	Percent		
1- 5			1	2.2	1	2.2
6-10	1	2.2	6	13.3	7	15.5
11-20	6	13.3	12	26.6	18	40
21-30	3	6.6	8	17.7	11	24.4
31-40	5	11.1	-	-	5	11.1
41-50	1	2.2	-	-	1	2.2
51-60	1	2.2	-	-	1	2.2
61-70	1	2.2	-	-	1	2.2
Total	18	40	27	60	45	100

Source: Field Survey, 2017

We can see on table on. 7.2.1 The income of respondents and their families (unemployed respondent's families only). If respondents are from wealthy families

live their lives more satisfactory rather than respondents from not so wealthy families because their families can fulfill their needs and demands. Table no. 7.2.1 illustrated 40 present of respondent's income (family and individual) is 11 to 20 thousand (family 13.3 presents, individual 26.6 presents). Only one respondent income is 1 to 5 thousands. Only present families can earn 41 to 50 thousand in averages, same as other 51 to 60 and 61 to 70 thousand earners. There are no any respondent who can earn individually more than 30 thousand. 17.7 present out of 60 present respondents can earn 21 to 30 thousand per months whereas only 6.6 present unemployed respondent's families earn 21 to 30 thousand per months.

7.2.2 Bank account or saving groups

To find out the economical or financial situation, respondents were asked they have their own bank account or if they are involved any saving groups. In this research 50% of the respondents have their own bank accounts or they are involved in some kind of saving group. And other 50% have not any savings or bank account. Chart 7.3 illustrated the saving situation of respondents.

Chart 7.3: Situation of saving or bank account of respondents
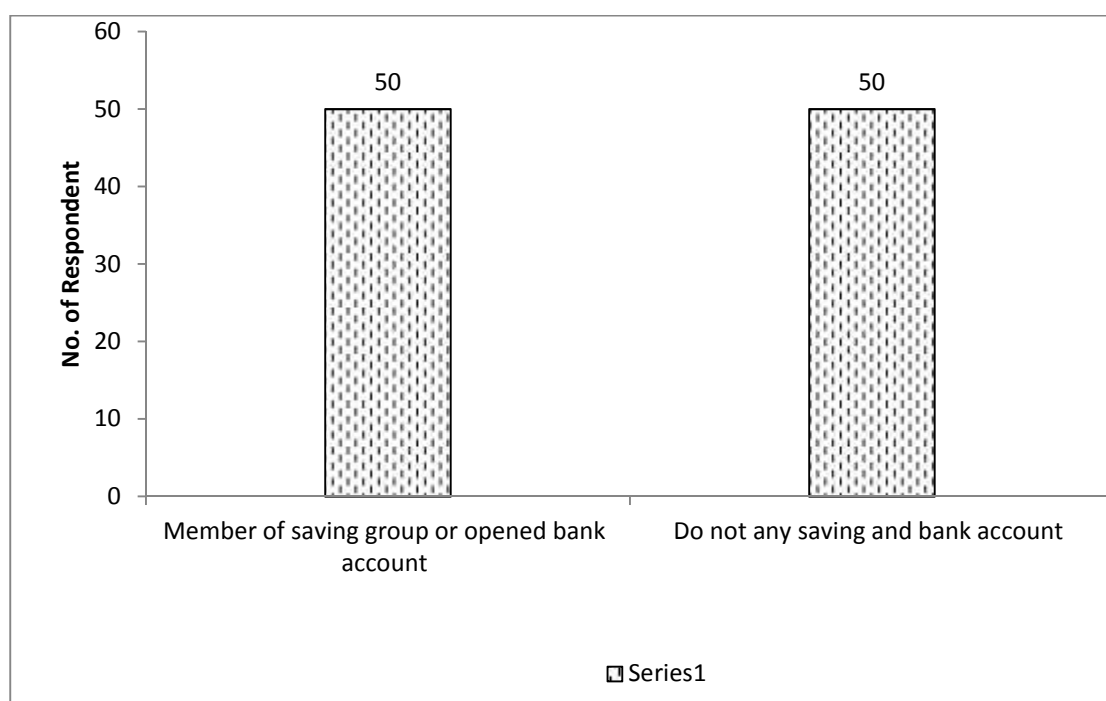
Source: Field Survey, 2017

Most of the respondents are unemployed however they got their disabled allowances per months from government 50% of respondents have not any savings yet even some of them involved some kind of employments they have not any saving for their future. Other half respondents have their own bank accounts and savings. Respondents who have their savings are engaged in some kind of works. Some of them have their own saving account even they are unemployment, their families or guidance did saving for their future.

7.2.3 Reason of economical difficulties for people with disability

Person with disability are likely to have limited opportunities to earn income. Even the employed person with disability does have bitter experiences of being discriminated, humiliated and ignored in their workplace. Data is unavailable on how many people with disabilities are involved in employment. Many have benefited from self employment activities such as handicrafts, farming, animal husbandry, electrical devices repairing; computer training etc. but few of them can continue their skills as a profession. Respondents who are involved in jobs experience exhibit that they are facing difficulties and discrimination in their workplace.

Government provides NR 2000 and 600 per month to people with complete (red card holder) and severe disability (blue card holder) that cannot be addressed by the employment program. Twenty-eight of the respondents in the survey have blue disability identity card. Nine respondent have red card other 8 respondents have yellow or white card which means they only identified as a disabled person but cannot get any allowances from government.

Respondents who receiving their allowances only five respondent were spend their money at their own choices, whereas the allowances of the remaining twenty-seven respondents utilizing for household expenses. Chart no.. illustrated the utilization of allowances by respondents.

Chart no.7.4: Utilization of allowances by respondents.

Legend:
- Education (2)
- Household expenses (27)
- Treatment (3)
- Personal Expenses (5)

Values shown: 5, 14, 8, 73
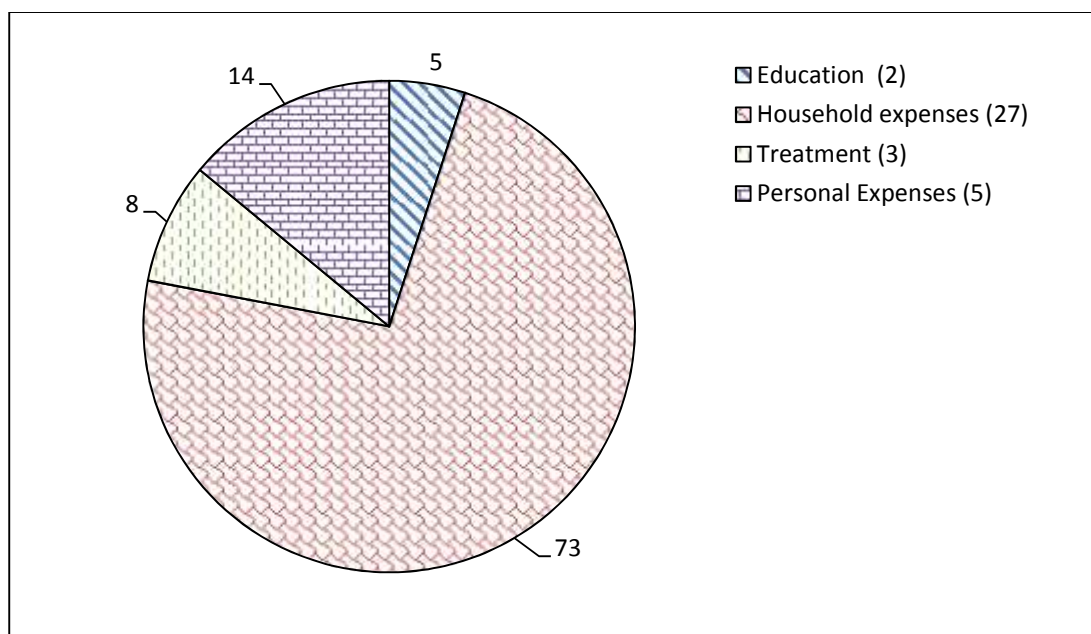
Source: Field Survey, 2017

Case study 5

Job verses business (Name and address changed)

My name is Praksh Gurung. I am 32 years old and I have disability called spinal cord injury. I am a tyler. I did try to find a job in government and nongovernment places but there were so many barriers I had to face. So as a result I started my own business. But starting a new business from a person like me was not an easy task even the business idea was small. INF provides me training on bad weaving and television and mobile repair training. My wife who has polio, also took training from there, actually we start meeting from our training period. After we married we decided to start our own business. We opened small clothes stitches shop and it's been a two years we are happily doing our business.

One of the biggest obstacles for the people with disability is transportation and mobility barriers. I had my wheelchair and my wife use walker for transport. After we started our business we suffer a lot because our shop was far from our living room and it was difficult for us to take a bus to go to the shop and back again. After 1 year I

bought a four wheel scooter. I had to hire from India and it was cost a lot but somehow I managed to buy it. Now, we have two scooters for me and for my wife separately. Transportation is easy and it helps us build our business. Recently we opened fresh vegetable shop and our two kids also help us after their school. We can carry our whole things on scooters and easily transport. Before this people in my community didn't have much time for me. Now I have respect from them. I have plans for the future. I am now fully independent.

## 7.2.4 Economic life after using Assistive technological devices

Lack of assistive technological devices and lack of accessible infrastructure people with disability unable to get educational opportunities, work, skill developments etc. and the result is poor economical condition. Disabled friendly infrastructure is a key to increase the access of people with disability to different service. These are the main reason of being economically depended on their families.

National Policy and Plan of Action on Disability, 2006 insure that the public places have to be friendly for people living with disability but the recently established structures at least roads, public buildings do not strictly follow the directive. Consequently people with disability experience hardship in accessing services such as transports, information, and assistive devices and so on.

In this study 60 present of Respondents are engaged in different occupations such as agriculture, service, laboring, business etc even they felt bitter experiences on their work places, they accepted the facts that assistive technological devices are one of the main things to help them to become employed.

- Help to become employed
- Cut financial support from family
- Able to save and spend own money when needed
- Helping family financially
- Enable to live more capable lives
- Helping in business
- Able to learn new skills

Figure no: 7.5 Economical condition of respondents after using ATDs
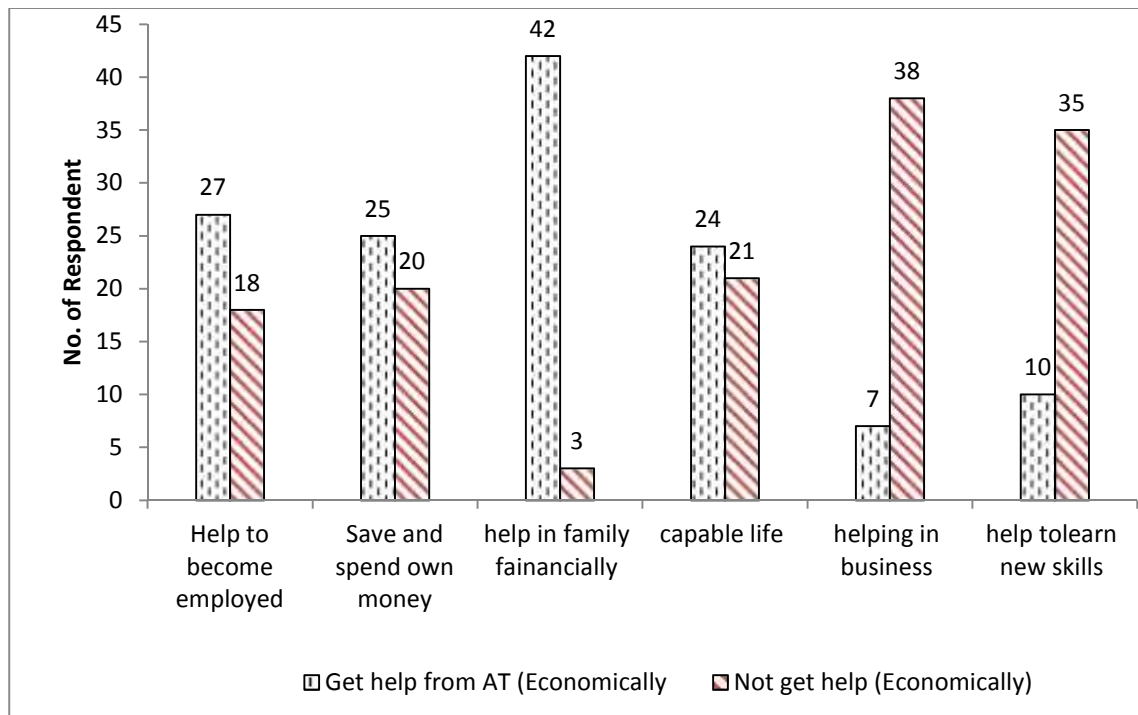
Source: Field Survey, 2017

CHAPTER EIGHT

SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION

8.1 Summary

Disability is a contested concept, with different meanings for different communities. It may be used to refer to physical or mental attributes that some institutions, particularly medicine, view as needing to be fixed. It may refer to limitations imposed on people by the constraints of an ablest society or the term may serve to refer to the identity of people with disabilities. The disabled always wish for the words and recommendations used for them not to be disgraceful, uncivilized and neglected but the different phrasal recommendations like people with different capabilities and challenging people regarding sentimental complexities. The Nepalese constitution defines persons with disabilities as persons who are mentally or physically unable or incompetent to lead a normal life. This term includes persons whose mobility is impaired, who suffer from spinal curvature, who are visually impaired in one or both eyes, who have hearing impairment, who are unable to speak properly, or whose hands, legs or fingers are impaired or missing. Today disability is seen very differently even though many people have still not come to terms with it.

Five categories of the people with disabilities: visually impaired, hearing impaired, physically disabled, mentally retired and mentally disordered is recognized by the Government of Nepal. According to the National census 2011, two percent (1.94%; 5,13,321) of the total population of Nepal having some kind of disability.

This study describes the situation of disabled and relation between disabled and technology. The main focus is on the situation of physically disabled people who are using different kind of Assistive devices. This study describes the barriers faced by them, affects of barriers, infrastructures, their social and economic life before and after using ATs. Explorative as well as descriptive research design has been used in this study.

In this study researcher used convenience sampling method to select the organizations The study is conducted on members of different organizations of people with disability namely ILS-Nepal, CBRS, CDS-N, Of Pokhara valley. Only the physical disabled members are selected. There are nine organizations who work for people with physically disabled. Convenience sampling method used to select the respondents for the research. Total numbers of 45 physical disabled people were selected out of 60 from three organizations by convenience sampling method. Primary and secondary source of data has been used. Primary data has been collected from the interview, participant observation, questionnaire schedule and focus group discussion. Secondary source of data are information from various journals, online article, publication related to disability and reports of disability organization have been used.

8.2 Major Finding of the Study:

1. PWDs was age group from 21-30 are highest with 26.6% and the lowest age group was 60 with only one respondent. Male respondents (57.7%) were higher than female respondents (42.2%).

2. Major respondents of this research were Spinal Cord Injury group (9 out of 45). And Cerebral Palsy (8out of 45) was second highest. There were 5 respondents for Amputation group. Club foot, burn, hip joint problem and polio group were forth with 4 respondents each. Only one respondent found for OL and Athrise group.

3. 45% respondents were disabled dew to accident, 37.5% by birth and 17.5% respondents got their disability because of illness or disease.

4. Illiterate rate (6.6%) was low which means most of the respondents are literate or got different level of education. The large percent of respondents were just literate (37.7). 5 respondents had studies till primary, 6 respondents did not finish their S.L.C and

5. 44.5% respondents were married and 55.5% respondents were unmarried. Most of the respondents get married before they got disability only few of them married after disability.

6. Ethnic group was highest (44.4%) second highest was Brahmins (28.8%), third was Chhetries (17.7%) and Dalit respondents were very less (8.8%).

7. Even ethnic group was highest in the research most of the respondents were Hindus (62.2%). Buddhist was second highest group (22.2%) and christen group was last (15.5%).

8. 82.2% respondents were migrated from different places to Pokhara valley. There were only seven (17.7 %) out of 35 natives of Pokhara valley. Lack of treatment center or health center, lack of disabled friendly environment are the causes of migration of disabled people.

9. 60 % disabled people lived in rent with their families and 33.3 percent disabled people were live in their own house with their families. Only 6.6% disabled lived with their friends in rent.

10. Respondents who have not any paying job, were higher with 40%. They had to depend on their family for living because they were not able to work or not get any chance to work like other people. 20% respondents were involved in services. 15.5 percent people did their business and self employed were 11.1 percent. Only 3 people (6.6%) involved in agriculture based occupation. 2 people (4.4%) were labour and only one respondent found engaged on social work.

11. Respondents who were used four wheels scooter they all have driving license. 18 respondents out of 45 have driving license for modified scooter/four wheel scooter.

12. People with disability often face different barriers like physical, attitudinal, social, organizational and technological barriers.

13. The physical barrier faced by them are steps, slippery paving and floors, narrow doors, less space for wheelchair, public transportations etc.

14. The attitudinal barriers face by them are they often face discrimination, abuse, they are treated as subject as pity therefore they want to isolated themselves.

15. People with disability often face technological barriers. Assistive technology would be most helpful for a person with a disability it can create unintentional barriers for some users. They are not affordable, unavailability, lack of information are the major barrier of using technologies for people with disabilities.

16. Organizational barrier are policies, procedures. Qualified people with disabilities the opportunity to participate in or benefit from federally funded

programs, services, or other benefits and the result is they have less experience about the priority in job or services in privet or government firms.

17. The impact of physical barriers usually are leaving people with disability isolated, create limitation in social participation, most of their choices have influence of their guardians as they are economically dependent upon their parents, could not acquire the higher education.

18. Generally there are 7 types of assistive technological devices that responded are using. They are wheelchair, crutches, canes, orthotic device, prosthetic device, four wheels scooter and walker.

19. Osteogenesis Imperfecta (O.I), Club foot, Hip joint problem, Spinal bifida and Athrise group are using only one type of ATDs. Whereas other disability group using 2 or more than 2 types of ATDs

20. All respondents are using different types of devices however 20% respondent have not any information about assistive technological devices, 31.1% have fully information about devices and other 48.8% have little information about it. The ages (too young or too old) and level of education are the main reason to get information about assistive technologies.

21. 8.8% of respondents bought their own AT and 56% respondents got form donation or sponsor from different government or non government organizations. Because some of respondents using more than one AT, 33.3% respondents bought some and they got from donation also.

22. 51.1% respondents are content on their ATDs 26.6% respondents are less content; very content people are 17.7%. There were 2 (4.4%) respondents are not content. the two respondents who were not satisfy because they wanted more verity of ATDs to make their life easier.

23. 37.7% respondent thought that the main problems to get assistive devices were their cost. Many assistive devices are expensive and not affordable for them. In other hand 44.4% respondents thought unavailability was the main problem to get assistive devices. People who have lack information about assistive devices they didn't even know what type of devices were suitable for them.

24. Lack of funds, lack of workers, lack of barrier free infrastructure, lack of knowledge about new technology etc are the main reason or barriers to use AT.

25. The principles of universal design and ensuring the accessibility standards are the new things for Nepal. So it will take time to increase the concepts and follow the principles of universal design.

26. People's attitude, physical barriers and lacks of punishment and reward system are the main reason for socialization for PWDs.

27. After using AT respondents found they are more social then before. They become more independent.

28. There are 40% respondent were not involved any kind of paying work so they have to dependent finically on their families. Other 60% respondents no any respondent who can earn individually more than 30 thousand.

29. 50% of respondents have not any savings yet even some of them involved some kind of employments they have not any saving for their future. Other half respondents have their own bank accounts and savings. Respondents who have their savings are engaged in some kind of works. Some of them have their own saving account even they are unemployment, their families or guidance did saving for their future.

30. Twenty-eight of the respondents in the survey have blue disability identity card. Nine respondent have red card other 8 respondents have yellow or white card which means they only identified as a disabled person but cannot get any allowances from government.

31. Respondents who receiving their allowances only five respondent were spend their money at their own choices, whereas the allowances of the remaining twenty-seven respondents utilizing for household expenses.

32. Respondents who are engaged in different kinds of work or occupation believe that technology is the key for them to become finically strong and they do not need to dependent on their families and friends.

8.3 Conclusions

It is clear that disability is congenital or acquired by birth, due to accident or as a result of disease. It can occur in all age group and all sexes. According to the National census 2011, two percent (1.94%; 5,13,321) of the total population of Nepal having some kind of disability and this rate is increasing. This may be because of rapped grow population, rapid spread of chronic disease, accidents etc. Most of the

physical disabled group is disabled due to spinal cord injury result from accident. Beside injury Burn, Amputation and Hip joint problem also due to accident. Disabilities like Cerebral palsy, Spinal Bifida, Osteogenesis Imperfecta and club foot are occurred by birth. Disabilities like Polio, Paralysis, Athrise are the result of illness or disease. In the developing countries 80 percent of all disabled person live in isolated rural areas. The problem is made more complex by the fact that for the most part disabled person are usually economically weak. It is disheartening that most new technologies are still beyond the reach of world's disabled community, particularly those living in developing countries like Nepal.

Living with the disabilities commonly experienced different challenges or barriers on their day to day life. Many people with disabilities in Pokhara taking part in the basic activities of daily life, such as going to work, school, or university, gathering with friends or relatives, buying groceries, attending cultural events, or visiting the doctor, can be extremely difficult or even impossible due to a range of different types of barriers they encounter. Barriers can be physical, such as the absence of a ramp in public or workplace or they can consist of attitudes that result in discrimination by employers, doctors, transport operators, or shopkeepers. Consequently, many people with disabilities may rarely leave home, have incomplete or substandard educations, and may never start a family or have meaningful employment.

Many people in focus group dissection for this research admitted that they have actually avoided talking to a disabled person because they were not sure how to communicate with them. Disabled respondent's and their families tell scoop that negative attitudes affect every area of their lives such as in the playground, at work, in shop, on the streets etc. Much of the discomfort people feel about disability may stem from lack of understanding. Not enough people know a disabled person and may are concerned that they will do or say the wrong thing when talking to disabled people or about disability.

Wheelchair, crutches, walker, canes, orthotic devices, prosthetic device and four wheels scooters are the main common Assistive devices are used by people with physical disabled. The Government has taken no initiatives in manufacturing and distributing assistive devices. As a result, all the modern assistive devices are imported and distributed occasionally as charity objects. Devices like wheelchairs, four wheels scooters are not manufactures in Nepal. Have to import from abroad or

have to depend upon donors. Devices like crouches, canes, arch, walking/standing frames etc are made in local level by using local materials. But even some organization created devices not enough for people who needed the most. Less resources, lack of found, limited finical resources are the main barrier of using AT. Lack of disabled friendly infrastructures, inadequacy of knowledge of new ATs, lack of quality devices are also the reason to created problems to get ATs.

Many types of devices help disabled people in their daily life such as dressing, cooking, cleaning etc. as well in social life such as shopping, going out with their families and friends. Most of the respondents felt their confident level increased. Their friend circle and public relation increased due to networking with other disabled people. They don't have to depend on their families and friends. Even there are many physical barriers to use assistive devices, respondents found many changes on their lives.

In this study 60 present of Respondents are engaged in different occupations such as agriculture, service, laboring, business etc even they felt bitter experiences on their work places, they accepted the facts that assistive technological devices are one of the main things to help them to become employed. With the help of ATs they can cut financial support from family, able to save and spend own money when needed, helping family financially, and enable to live more capable lives.

8.4 Recommendations

The research proves that Assistive Technologies are helping to change the life pattern of PWDs. However they are facing different barriers on their daily life. On the basis of this research result we can recommend further steps to be taken to minimize the barriers faced by them.

- Concerned organizations working in the disability sector either governmental or nongovernmental must work together for the same cause's issues. Enable access to all mainstream policies, system and services.
- Existing rules and regulation must be implemented and there must be regular monitoring by both state and stake holder.
- Awareness rising programs, campaign about disability issues through street plays, songs, should be organized to raise awareness programs. Mutual respect

and understanding contribute to an inclusive society. Therefore it is vital to improve public understanding of disability, confront negative perceptions, and represent disability fairly.

- ⟩ Public medical services should try and reduce the probability of getting disabled due to genetic or environmental reasons.
- ⟩ Invest in specific programmes and services for PWDs. Such as rehabilitation, support services or training. Income generation training must be provided to PWDs for their independent living.
- ⟩ Accessibility and universal design programmer appropriate for low-income settings.

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Questionnaire

1. **General information**

   Name: Age:

   Address:

   Gender:

   ☐ A. Male   ☐ B. Female   ☐ C. Other

   Cast/Ethnicity:

   ☐ A. Brahmin   ☐ B. Chhetri   ☐ C. Ethnic

   ☐ D. Dalits

   Religion:

   ☐ A. Hindu   ☐ B. Buddhist   ☐ C.

   Christian

   ☐ D. Muslim   ☐ E. Other

   Residential background:

   ☐ A. Migrants   ☐ B. Native

   Marital Status:

   ☐ A. Married   ☐ B. Unmarried

   ☐ C. Separated   ☐ D. Widowhood

2. Types of physical disability:

   ☐ Cerebral Palsy (CB)

   ☐ Spine Bifida (SB)

   ☐ Spinal cord injury

   ☐ Poliomyelitis

   ☐ Amputation

   ☐ Club Foot

   ☐ Hip joint problem

   ☐ Other please Specify: _____

3. Cause of Disability:

    ☐ A. By birth   ☐ B. Accident

    ☐ C. Effect of medicine   ☐ D. Disease or illness

    ☐ E. If other specify _____

4. Education:

    ☐ A. Illiterate   ☐ B. Literate

    ☐ C. Below S.L.C   ☐ D. Higher education

    ☐ E. Graduate   ☐ F. Post graduate

    ☐ G. Above

5. Occupation:

    ☐ A. Service   ☐ B. Unemployed

    ☐ C. Self-employed   ☐ D. Farmer

    ☐ E. Business   ☐ F. Other please specify:_____

6. Living:

    ☐ A. living independently   ☐ B. living with family

    ☐ C. living with sharing with friends

7. What are the different barriers faced by you? (in house and public places)

    ☐ A. Physical barriers   ☐ B. Organizational and social

    ☐ C. Attitudinal   ☐ C. Social

    ☐ D. Technological   ☐ If other please specify:_____

8. What are the impacts of barriers in your life?

    ☐ A. Felt uncomfortable/ guilt and emptiness

    ☐ B. Afraid of being harm.

    ☐ C. Hard to making friends and socially involved

    ☐ D. To acquire higher education

    ☐ E. If other specify_____

9. Do you know about Assistive Technology/device?

☐A. Yes   ☐B. No

10. If 'yes' what is assistive technology/device?

☐A. Devise for everyone that can help to complete our daily work.

☐B. Devise that specially made for differently able people to help them do

something that they might not otherwise be able to do well or at all.

☐C. If other specify:_____

11. What types of technology/devise do you using?

☐A. Wheelchair
☐B. Crutches
☐C. Walker
☐D. Cants
☐E. Orthotic devices (knee cap, ankle braces, wrist braces, heel castle etc.)
☐F. Prosthetic devices
☐G. Four wheels scooter
☐If other please specify: _____

12. Where do you get?

☐ A. Buy   ☐B. Donation   ☐C. Sponsor

13. Is it accessible for you?

☐ A. Yes   ☐B. No

14. What changes you feel or find after using technology?

☐A. Feel independent and free
☐B. Feel more social
☐C. Got confident
☐D. If other specify _____

Social Life/Status

15. Support from daily activities?

☐A. Self ☐B. Little support for others

☐C. Fully dependent in other

16. Do you participate in household works?

☐A. Yes ☐B. No

17. Do you involved in social activities?

☐ A. Yes ☐B. No

18. Where you involved?

☐A. Community gathering. ☐B. Religious activities

☐C. Festivals ☐D Haat bazaar

☐ E. If other specify_____

☐ F. Don't involved

19. And do you sit in social functions equally with others?

☐A. Yes ☐B. No.

20. Are you facing difficulties in joining communities or public places?

☐A. Yes ☐B. No.

21. Reason for facing difficulties?

☐A. Because of their attitude

☐B. Physical barriers

☐C. Self doubts and mind wandering

☐D. If other please specifies: _____

☐D. Does not feel like

22. In which organization do you involved

    Name of the organization: _____

    Position: _____

23. Any other organization support for you?

    ☐ A. Yes   ☐ B. No

    .

24. From which organization support for you?

    1. _____

    2. _____

    3. _____

25. What kind of support you get from local organization?

    ☐ A. Access to assistive technology/devise

    ☐ B. Skills development training

    ☐ C. Income generation

    ☐ D. Education

    ☐ E. Job opportunities

    ☐ F. If other please specify: _____

26. What kinds of social challenge are solved with the help of technology?

    ☐ A. Care for myself and my family

    ☐ B. learn in school and other educational institution

    ☐ C. Participate fully in community life

    ☐ D. Transportation

    ☐ F. If other specify _____

27. How technology helps you to change your social life?

    ☐ A. Help to live independently

    ☐ B. Help become Self motivated

    ☐ C. Participant fully in communities

    ☐ D. Help to become employed

    ☐ E. If other please specify: _____

Economic life/status

28. Disabled allowance

    ☐ A. Received   ☐ B. Not received

29. Types of disabled identity card.

    ☐ Blue   ☐ Red   ☐ Yellow   ☐ White

30. Where do you spend your allowance?

    ☐ Treatment   ☐ Household expenses

    ☐ Education   ☐ Business

    ☐ other please specify: _____

31. Main sources of family income:

    ☐ A. Service   ☐ B. Business

    ☐ C. Labour   ☐ D Agriculture

    ☐ E. Pension   ☐ F. Remittance

    ☐ G. other please specify: _____

32. Monthly income (In Thousands):

    Rs. _____

33. Are you economically self sufficient?

    ☐ A. Yes   ☐ B. No.

34. If 'yes' monthly income (In thousands)

    Rs. _____

35. If not reason for not working?

    ☐ A. Student   ☐ B. Unable

    ☐ C. Old age   ☐ D. lost job due to disability

    ☐ E. Family problems   ☐ E. Not Interest

36. Have you taken the membership of any saving groups or opened the bank account?

☐A. Yes   ☐B. No.

37. Does technology help you to improve your economic life?

☐A. Yes   ☐B. No.

38. How it helps you to increase your economic status?

☐A. Help to become employed

☐B. Helping in business

☐C. Able to learn new skills

☐D. Other please specifies. _____

39. What changes you find in your economic life/status after using technology?

☐A. By help enables to live more capable lives

☐B. Cut financial support from family

☐C. Able to save and spend my own money when I need it.

☐D. Helping family financially.

☐C. If other specify _____

40. Are you satisfied?

☐A. Yes   ☐B. No

41. What are the problems to get technology?

☐A. Lack of Information   ☐B. Expensive/not affordable

☐Unavailable   ☐C. Other please specify: _____

42. What is your expectation from government?

☐A. For more allowance

☐C. More program for us (like skills training, education, health etc.)

☐D. Disabled friendly infrastructures

☐E. Other specify _____

What should you expect of assistive technology?

☐A. Affordable

☐B. Availabilities

☐C. Other please specify: _____

Questions for Focus group discussion FGD

1. What do you know about disability and disabled people?
2. What do you think about disabled discrimination?
3. What are the rights of PWDs?
4. What are the barriers faced by PWPD. (people with physical disability)
5. What government should do about this kind of barriers?
6. What non government organizations and local level should do about the barriers?
7. How Physical barriers effect PWDs? And what are the impacts?
8. How local level can help to develop Assistive technological devices? (For funding, for availabilities of devices, for quality devices, to reconstitution cultural stigma about technology etc.)
9. Are there other recommendations that you have or suggestion you would like to make.