THE CHALLENGES IN PROVIDING REHABILITATIONS SERVICES TO PEOPLE WITH DISABILITIES IN ETHIOPIA: EMPIRICAL EVIDENCE FROM PROSTHETICS-ORTHOTICS CENTER OF ADDIS ABABA

This thesis submitted to the school of graduate studies in partial fulfillment of the requirements for the degree of masters of in public management and policy (MPMP)

BY

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APPROVAL SHEET

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The challenges in providing rehabilitations services to people with disabilities in Ethiopia: Empirical evidence from prosthetics-orthotics center

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DECLARATION

I declare that this thesis entitled, The Challenges in Providing Rehabilitations Services to People with Disabilities in Ethiopia: Empirical Evidence from Prosthetics-Orthotics Center of Addis Ababa for the master's degree of Addis Ababa University Department of Public Administration and Development Management all sources of the materials used for this thesis have been dully acknowledged. This thesis is not submitted to any other institution for the award of any academic degree, diploma, or certificate.

With high regards,

Name: ----------

Signature----------

Date ----------

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ABBREVIATIONS AND ACRONYMS

CRPD	Convention on the Rights of Persons with Disabilities
DPO	Disability People Organization
EMI	Ethiopia Management Institute
FGD	Focus Group Discussion
GTP	Growth and Transformation Plan
HI	Handicap international
ICRC	International Committee of the Red Cross
MOLSA	Ministry of Labor Social Affairs
NGO	Nongovernmental organization
POC	Prosthesis and Orthotic Center
PWD	People with Disabilities
UN	United Nations
UNCRPD	United Nations Convention on the Rights of Persons with disabilities
WB	World Bank
WHO	World Health Organization

ABSTRACT

Rehabilitations services are improve the overall participations of person with disability. Disability is habitually associated with rehabilitations services especially physical impairments needs appropriate assistive devices that fits his/her want. Luck of sufficient intervention are decreases the access of education, employment, opportunities and resources of PWDs. The Physical rehabilitations services provider in Ethiopia saturated in urban area. Prostatic and orthotics center is one among urban based physical rehabilitations services providers. It's playing a significant role to improving the life of PWDs. Since 2017/18 only more than twenty thousand clients gets various kinds of services and products of the center. This study was conducted based on single case study designs by using qualitative methods through purposive sampling with a willingness of participates. Data were gathered from both sources by using various instruments such as opeen-ended interview, focus group discussion (FGD), observation, document review, and other necessary secondary data. It was analyzed in depth with combination of, document analysis, and, FGD and interview result including investigator observation. This study was providing the evidence-based information to advance restoration services provision for person with disability in Prosthetics and Orthotics Center.

Keywords: Challenges, disability, physical rehabilitation services, POC,

Contents

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND

Disability is reducing access of education, employment, opportunities and resources. This exclusion may be due to inadequate provision of rehabilitation services that complicate the prevalence of barriers to social, cultural, economic, political and physical environment.

World Health Organization (WHO) recognizes disability as a global public health issue, a human rights issue, and a development priority. People with disabilities have poorer health outcomes, lower education achievements, less economic participation and higher rates of poverty than people without disabilities. This was partly because people with disabilities experience barriers in accessing of intervation services that many of us have long taken for granted, including health, education, employment, and transport as well as information. These difficulties were aggravated in less advantaged communities (WHO 2011) Disability can be assumed as both a cause and a consequence of poverty. People living in poverty usually lack access to basic social services, such as health care and education, as well as opportunities for safe employment and proper housing conditions.(Handicap-International 2010) The other review made in five West African countries noted the challenges of inclusion on disability-related like health, education and social affairs and policies of execution. (Taylor and Francis 2017)

According to a report published by the WHO and World Bank (2011), around 785 million (15.6 %) of the population of the world has a disability among them eighty per cent (80%) of persons with disabilities live in developing countries. As the world disabled website assessed on december 2018 estimated that 60-80 million or 10 percent of African people were living with disabilities. Among the total population of Sub-Saharan Africa approximately 78 million population were disabled (Akouetevi Aduayom-Ahego1 2017).

The 2011 World Report on Disability jointly issued by the World Bank and World Health Organization in estimated that 17.6% of the Ethiopian populations have disability. The 2007 National Population and Housing Census revealed that the number of people living with disability (PWDs) constitutes to be 864,218 among those 464,202 were Male and 400, 016

Female. Out of the total PWDs, 31.18% have leg, hand and body movement difficulties, the physically disabled constitute the highest population of PWDs in Ethiopia .

People with disability were people who have long-term physical, mental, intellectual or sensory impairments, which, when they meet various barriers, may hinder their full, effective participation in society on an equal basis with others(WHO 2017) .The study conducted in Ethiopia, noted that Physical disability was any condition that were permanently prevents normal body movement and/or control. 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 was common. (Berihu 2015)

Disability itself not inability but absence of approprate rehabitation services provision due to various challenges may made them inabity through limiting the movement of desabled and upturn their dependance on the other . It was habitually associated with rehabilitation services and happen anytime, anywhere on any persons therefore, no one immunised from disability. Desabled needs approprate intervantion to address their barriers in society and functional limitations. Rehabilitation was a process, whose purpose was remove or reduce as far as possible restriction on the activities of people with disabilities and enables them to become more independent and enjoy the highest possible quality of life. (ICRC 2012)

The Articles 26 (Rehabilitation) and 20 (Access) of the Convention on the Rights of Persons with Disabilities (CRPD) have addressed that the member states should ensure that persons with disabilities must have access to a justified health service. Ethiopia has been adopted the relevant initiatives and ratified international legal texts on the rights of persons with disabilities including the UN Convention on the Rights of Persons with Disabilities (UNCRPD) in 2010 (MoLSA 2011) Ethiopia governmete made the rights of a person with disability (PWD) an integral part of its constitution Article 25 of the constitution states that “All persons are equal before the law and entitled without any discrimination equal protection of the law.” and, Article 41 of the constitution states “The state shall within available means allocate resources to provide rehabilitation and assistance to persons with disabilities (FDRE 1995). The second phase of Ethiopia national Growth and Transformation Plan, (GTP II 2015-2020), has various chapters and articles which refer directly or indirectly to persons with disabilities, referencing for example

special needs education for children with disabilities, preventive, curative, emergency care and rehabilitative health services, and the aim to expand social security services and participation in political decision making. (Light-for-the-World-International 2016)

Disability was caused by many factors in Ehiopia, such as birth defects, environmental hazards, industrial accidents, war, and other conflicts. Some of the factors were easily preventable, such as malnutrition and diseases (MoLSA 2011). One of the problems in rehabilitation was the lack of demographic statistics regarding People with disability (PWD). Data gathered from various countries exposed that the people with disability health care provider skills were inadequate to meet their needs. Data on rehabilitation services, type and quality and estimates of needs and unmet needs were not readily available to present evidence. PWD often use health care system more frequently and challenges associated with preventive health care needs for this population have not been adequately addressed; the studies show that people with disability often have lower levels of health than the general population(Kianoush Abdi1 2016)

Physical disabilities limit people's mobility and their ability to participate fully in society. Across the world, it has been estimated that 0.5% of the world's populations with physical disabilities were in needs of prosthetic and orthotic devices However, the World Health Organization calculates that only 5-15% of people with disabilities who need assistive technologies can access them. In effect over 29.4 million people with disabilities experience everyday life without the prosthetic and orthotic technologies they deserve. (Sexton, Stills et al. 2015)

According standards published by WHO in 2017 only 1 in 10 people in needs has access assistive products, including prostheses and orthoses because of, their high cost and lack of awareness, availability, trained personnel, policy and financing. The studies conducted in Sub-Saharan Africa, Togo shows the challenges on prosthetic and Orthotics education was lack biomechanical tools and professional experiences(Aduayom-Ahego, Ehara et al. 2017) The study conducted on the challenges of providing pre-prosthetic rehabilitation in a rural area of South Africa showed prosthetic rehabilitation and service delivery in developing countries, especially in rural settings, was very challenging , some of these problems include inaccessibility of healthcare services, a lack of trained rehabilitation personnel to provide rehabilitation services,

difficulty attracting and retaining staff and a lack of research and evidence-based practice. (Ennoin and Anton 2017)

Pursuit to MoLSA, in 2017 from the total number of disabled people, due to lack of organizational and institutional capacity of urban-based physical rehabilitation center of country, only 13.8% were accesses physical rehabilitation service as their needs such as orthotics and prosthesis and others component. The study conducted by Tessema in 2017 indicate that place to live, access to transportation and awareness and scientific information were the most challenging for people with disability in Addis Ababa.(Tessema 2017)

Physical Rehabilitation service provider center in Ethiopia situated in urban areas that were not accessible for the majority of people living in rural areas and registered/categorized as governmental or Non-governmental Organization among city centered physical rehabilitation service provider prostheses –orthotic center was one. (MoLSA 2011). MoLSA is the main government body responsible for the socio-economic rehabilitation of disabled people. Activities that address disability issues are coordinated at the federal level by the MoLSA's Social Welfare Development Promotion Directorate.

Prosthetics-Orthotics Center (POC) , was a non-profit making organization which established in 1961 in metropolitan of Ethiopia with the aims of providing physical rehabilitation services for persons with disabilities and physiotherapy treatment for other citizens who have different types of health problems and its pioneer in Ethiopia. Board was a higher level according to 1991 Organizational structure.(EMI 1991) They were appointed from different FDRE ministry offices such as the ministry of labor and social affair, the ministry of Education, the ministry of health, Ethiopian Red Cross ,disability federation and prosthetic and orthotics center.

This oldest center was offered institutional based beneficiary centered various kinds' of physical rehabilitation service like orthopedic devices, component and mobility aid, and physiotherapy treatment by charging beneficiary or sponsor of beneficiary. It has to be also fabricated and distributed various types and sizes of ortho-shoe, prosthetic, orthotic appliances, mobility aids and devices, footwear supports and corrective and pain relief equipments by replacing imported raw material into local raw material. In addition to its basic objective the center was offered

various short terms training for different professionals such as orthopedics and physiotherapy that come from domestic and other African countries and finally, 25 orthopedic technicians were graduated in diploma on February 20th, 2005 by accomplishing necessary courses. These programs were dinged and offered through collaboration of POC, ICRC, and Ministry of labors and social affairs of inland.(MoLSA 2005) In prosthetics and orthotic center, anyone did not access any services and productions freely that means any beneficiary of the center acquired services by their own fees and the pricing system of the center were depend on the service provided and authority of the center were delegated to all layer of management, and independent and customized their productions in to local and organizational structure were allow increasing of the human resource when they needed, etc. .

According to Hughes (2003) as cited in Kulachet Mongkol, (2011) The new approach, namely New Public Management (NPM) emerged to replace the traditional model of public management during the 1980s and 1990s in response to the inadequacies of the traditional model NPM with emphasis on efficiency, cost control, quality of services delivered to clients and organizational flexibility. New Public Management was thus constructed against such principles of bureaucracy as centralization, the politics-administration continuum, prudence and process accountability (Charih and Rouillard, 1997).

The reforms express the New Public Management (NPM) movement and involve a bundle of radical changes, including privatization and contracting out, marketization of services still inside the public sector, and stronger performance management and manageralization. A typical NPM governance mode was a markets-and-management mix combining more competition among public services agencies with stronger line management within them. In central government, ministries downsize and export operational functions into newly autotomized “executive agencies” (Pollitt, Talbot, Caulfield, & Smullen, 2004).

The nature and activity of POC was confirm some part of NPM reforms, among mentioned above as Key elements NPM approaches reforms and practice like creation of autonomous agencies and devolution of budgets and financial control, increasing use of markets and increasing emphasis on performance outputs and customer orientation were in practice in Prosthetics Orthotics Center.

The center was played a significant role to change the life of persons with disability and increase their participation in the development of their country by providing rehabilitation service. The POC was still playing a key role to enhancing the life of a person with disabilities and their full participation to the overall development of the country. The 2017/18 Annual report of the organization shows that more than 20,067 people get various rehabilitation services. The services included the production of 326 prostheses, 525 orthotic, 1,157 ortho-shoe, 2,349 physiotherapy treatments in additionally to this 15,710 Component and mobility aid such as wheelchairs and crutches, rubber tips etc. on the other hand there was a high shortage of skilled manpower, technologically competent , raw materials and equipment's and legal status.(POC 2017/18)

All most all of the study conducted in various geographic areas of the world mentions the challenges related to the clients but they didn't include organizational side's challenges, which may lead to poor service delivery. This study would been searching the challenges in providing rehabilitation services, including physiotherapy, component and mobility aid, and Orthotics and Prosthesis for people with disabilities in the prosthetics-orthotics center as both clients and organizational sides.

1.2. Statement of the Problem

The Government of the Federal Democratic Republic of Ethiopia has made the rights of a person with disability (PWD) as an integral part of its Constitution Article 25 of the Constitution states that "All persons are equal before the law and entitled without any discrimination equal protection of the law." And, Article 41 of the constitution states "The state shall within available means allocate resources to provide rehabilitation and assistance to persons with disabilities.

According to a national physical strategic plan promulgated in 2011 by Ethiopian government through the concerned body, the Ministry of Labour and Social Affairs, officially announced that people with disabilities (PWDs) are among the" poorest and most vulnerable" social groups in Ethiopia, physical rehabilitation services available in the country are very limited and concentrated in the urban centers. On the other hand, the vesting people with disabilities living in rural areas can hardly access physical rehabilitation services.

Central statistics agency (CSA) estimated that from the total people of Ethiopia 73,909,355 million in 2010, 1.2 million of them were PWD. Based on this assessment, among the total number of PWD, 32 % were restricted totally or partial from the movement and need annually orthotics and prosthesis to reduce their dependency on others. Due to lack of organizational and institutional capacity of urban-based rehabilitation center from the above-mentioned PWD, only 13.8% accesses rehabilitation service such as orthotics and prosthesis and others component (MOLSA, 2017)

The 2017/2018 annual report of POC identified some problems that affect its rehabilitation services provision such as shortage of skilled manpower, technologically competent, raw materials and equipment. Standing from the various years annual report of the POC, I conduct preliminary observation to gather information from concerned body about physical rehabilitation services were regularly provided such as prostheses, orthoses, physiotherapy, walking aids and wheelchairs at POC and other center located in Ethiopia as a result, all most of, physical rehabilitation service were brought at urban area like other developing states and the products produced and services delivered in the oldest center were deducted from time to time. The owner of the center was unknown annual report of the center show it that means the center cannot

register as governmental or NGO and any studies don't conduct related with challenges that were faced to providing rehabilitation services for persons with disability in the oldest center.

Rehabilitation was a crucial element in ensuring the full inclusion of people with disabilities. It includes the provision of mobility devices such as prostheses, orthotic, walking aids and wheelchairs together with the therapy that will enable people with disabilities to make the fullest use of their devices. Physical rehabilitation must also include activities aimed at maintaining, adjusting, repairing and renewing the devices as needed. These mobility devices were a matter of equity for people with disabilities as they facilitate participation in education, work, family and community. (ICRC 2012)

Prostheses and orthotic are externally applied devices and products used to assist people with physical impairments or functional limitations, to improve their functioning and increase their potential to live healthy, productive, independent, dignified lives but only 1 in 10 people in need has access to assistive products, including prostheses and orthoses, because of their high cost and because of lack of awareness, availability, trained personnel, policy and financing (WHO 2017).

In Ethiopia different governmental and non-governmental organizations have been trying to improve the condition of these persons, the reasons of selection were, among urban-centered rehabilitation center POC was oldest and unique in nature means it does not register as governmental or NGO but it actively engaged in the provision of rehabilitation service for PWD with their problems that means due to its organizational structure nature it cover their operational and production cost itself, in other word it does not acquired governmental budget and subsides , lack of skill man power, deduction of item like blind stick and blindness of higher official performance evaluation.

The aim of this study was to assess the challenges faced in providing physical rehabilitation services for persons with disability in POC; however, these studies cannot include the causes of the client's disability. The study was addressing the following research questions:

1.3. Research Questions

1. How the Prosthetics-orthotics Center was producing and delivering the rehabilitation services to its beneficiaries?
2. How the services being delivered by the center were up to the standard set by WHO in 2017?
3. To what extent the services delivered by the center were accessible to the beneficiary?
4. What were the major institutional and organizational challenges affecting the performance of service delivery by the Center?

1.4. Objectives of the study

1.4.1. General objective

The aim of this study was to investigate the Challenges of Providing Rehabilitation Services for People with Physical Disabilities in POC

1.4.2. Specific objective

- To determine challenges faced to providing physical rehabilitation services such as physiotherapy, prostheses, orthotics and other component and mobility aid that affect beneficiary of POC
- To verify the accessibility and sustainability of service delivered to its clients

1.5. Significance of the study

Since meantime of this study did not found any research conducted in prosthetics and orthotics center that shows the challenges of rehabilitations services provision for people with Disability.

The study has been identified the problems of providing rehabilitation services for people with disability in POC which was vital to develop strategic objective for effective intervention on the provision of rehabilitation services and provide valuable information about Challenges of Providing Rehabilitation Services for People with Disabilities and the evidence was use for the high-level management of the center, DPOs, government and non-governmental organization those undertaken on provided of physical rehabilitation services. At last has been baseline data for scholars, orthopedic professions and also benefits the community at large, particularly to service providers, PWDS and their family.

1.6. The scope of the study

The study has been carried out only on POC; it's not fair generalizations were not free from limitations. This study was faced different challenges. Among others, shortage of time, unavailability of the participants to participate in the study, and shortage of reading materials have been the major challenges faced since study.

1.7. Operational definitions

Assistive products:" any external product including devices, equipment, instruments and software, specially produced or generally available, the primary purpose of which is to maintain or improve an individual's functioning and independence and thereby promote their well-being"

Orthosis, orthotic device or product: externally applied device used to modify the structural and functional characteristics of the neuromuscular and skeletal systems.

Orthotics: science and art of treating people by the use of orthoses.

Orthotist a person who completed approved course of education and training and authorized by an appropriate national authority to design, measure and fit orthoses.

Prosthesis, prosthetic device or product externally applied device used to replace wholly or partly an absent or deficient limb segment

Prosthetics science and art of treating people by the use of prostheses

Prosthetist person who completed approved course of education and training and is authorized by an appropriate national authority to design measure and fit prostheses

CHAPTER TWO

LITERATURE REVIEW

2.1. DISABILITY AND REHABILITATION OVERVIEW

There was no universally agreed definition of disability due to much reason among cultures was one. The cultures of world peoples were not identical. The variation of world culture influences on the people's view and treatments of persons with disabilities. The concept of culture was complex. According to taylor's as cited by lina in 2014 "culture or civilization taken in its widest ethnographic sense was that complex whole which includes knowledge, belief, art, morals, custom, and other capabilities and habits acquired by man as a member of society". Studies of culture can offer important insights into the socio-cultural aspects of disability. Perceptions of disability and personal, social, and practical consequences of impairment will differ depending on cultural factors.(Lina 2014)

Due to this and other reasons, there was no common consensus and single definition on the issues as a world. It was defines in different ways based on cultural norms and academicals backgrounds. Origins of disability were highly contextual and subjective. different scholars and organization define disability in diverse ways. The following were few.

International classification of functioning disability and health (ICF) defines disability as "an umbrella term, covering impairments, activity limitations, and participation restrictions"; adding that "disability is a contextual variable, dynamic over time and in relation to circumstances; its prevalence corresponds to social and economic status" according to hirut cited in 2016.

Disability is an umbrella term for impairments, limitations of activity and restrictions on participation resulting from the interaction between people with health conditions and the environmental barriers they encounter.(WHO 2017)

According to united nations convention on the rights of persons with disabilities 2006, article one, disability is persons who have long-term physical, mental, intellectual or sensory impairments that in the face of various negative attitudes or physical obstacles may prevent those persons from participating fully in society.(UN 2006)

The World Bank (2008) has also defined disability as the result of the interaction between people with different levels of function and the environment. This definition underscores that people with physical, sensory, mental or intellectual disabilities are disadvantaged because they are denied access to health, education, employment, and equalization of opportunities and full participation in all spheres of life.

Any restriction or lack of ability to perform an activity in a manner or within the range considered normal for human beings, resulting from impairment is termed as disability. (S. Ganesh Kumar 2012)

Disability refers to an individual constraint or restriction of an activity as a result of impairment. Handicap refers to the disadvantage to the individual resulting from an impairment or disability that presents a barrier to fulfilling a role or reaching a goal.(Prashant Srivastava and Kumar 2015)

Disability was complex, dynamic, multidimensional, and contested. It was not a new phenomenon for human beings that can/could experience at any time of life. They were regularly associated with rehabilitation services. Many people with disability require rehabilitation services to address their barriers in society and functional limitations. This marginalization was may be due to lack of rehabilitations services accessibility. Rehabilitation services provision for disabled were problematical because of its high cost and lack of awareness, availability, trained personnel, and policy and financing.(WHO 2017) as study conducted in Asia Iran in 2016 on challenges of providing rehabilitation service for people with disability revealed that environmental accessibility, absence of center and transportation cost were the main barriers. (Kianoush Abdi1 2016) the issues were different in developed and developing countries, and rehabilitation measures should be targeted according to the needs of the disabled. A majority of the disabled resides in rural areas where accessibility, availability, and utilization of rehabilitation services and its cost-effectiveness were the major issues to be considered. (S. Ganesh Kumar 2012)

Actually disabled peoples in the world excluded from access of service including mainstream this exclusion may be arise from inadequate provision of physical rehabilitation services that

complicate the prevalence of barriers to the social, cultural, economic, political and physical environment. It was an important public health problem, especially in developing countries. The problem was rise in future because of growth trend of world population, non-communicable diseases and change in age structure with upturn of life expectation and other so the same things true in the needs of restoration services means rehabilitation service needs will be expected to enlargement.

Modern rehabilitation originated in the u.s. since the 1940s, rehabilitation was an indispensable component of the health care system. The demand for rehabilitative services for the elderly group and patients was increasing year by year. In order to better meet this demand, it was meaningful to further improve the medical rehabilitation service system. (Hong Zhang and Shen 2014)

According to 2017 world health organization rehabilitation is a process that aims at enabling people with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels and provides the tools for them to attain independence and self-determination. Depending on the type of disability, various measures such as medical care, physical rehabilitation, vocational training, social support or help in achieving economic self-reliance may be needed for this.

Physical rehabilitation was an integral part of the process needed to ensure the full participation and inclusion in society of people with disabilities. It includes providing assistive devices such as prostheses, orthoses, walking aids and wheelchairs, together with the therapy that would enable disabled persons to make the fullest use of their devices. Restoring mobility was the first step towards enjoying such basic rights as access to food, shelter and education, getting a job and earning an income and, more generally, having the same opportunities as other members of society (ICRC 2009)

The convention of UN enacted in 2006 is given to participation of disabled people in the social, political and civil rights movement. Disabled people were entitled to participate in social service activities such as employment, education and recreations without any discrimination. In addition to this the CRPD states that the member states are responsible for taking effective measures to

ensure personal mobility for the greatest possible independence of people with disabilities. They also have a corresponding responsibility to promote and ensure the availability of and access to mobility aids, devices and assistive technologies, including prostheses and orthoses. The provision of rehabilitation was important to reduce the needs for formal support and enabling persons with disabilities to lead an independent life (Skempes and Bickenbach 2015) prosthetic and orthotic devices were can improve a person's function through addressing the needs of assistive technology. The aims of providing these services were to increase function and mobility (medical perspective) and increased activity and participation in society.(Lina 2014)

According to international standard published by who in 2017 , service users should be given the opportunity to choose their service provider and technology, including components and materials, as their need from the options available in the country and the limits set for financing or reimbursement." This standard imply that delivery of services are should be user-centered and service providers have the duty to share information about the results of assessments with users and caregivers and to explain treatment options, including products, technologies and materials, so that users can make decisions about their care. To ensure that the user-centered service providers should have a written user policy in the local language describing how users and caregivers should be treated throughout their contact with the service and how their rights would be upheld. All personnel should be adequately trained in the user policy, and service providers should be able to present evidence of compliance with the policy. The service delivery include assessment, casting and measurement, cast modification and rectification, manufacturing of prosthetic and orthotic devices, bench alignment, static and dynamic alignment, finishing, and product delivery. Prosthetic and orthotic services also need to include follow-up and repairs of devices.

Disability was naturally association with rehabilitations to restore, reduce their limitation. The post medication rehabilitation services were playing an important role to improving overall-round participation of a person with disabilities through restoring or reducing their limitation but the evidence shows their needs were unmeet due to numerous factors. Due to unmet of appropriate rehabilitation services person with disabilty were excluded from acess of education, ,resorcese, employmente opportunities, etc.

In Ethiopia, institutional based physical rehabilitation service in Ethiopia established during emperor regime in addis ababa. The provision of assistance to desabled was started about half a century ago. The assistance began by philanthropic individuals organized under a “mahiber.”. At that time the government was not involved in the issue of PWD . Currently all physical rehabilitaion services provider centers were sturated in urban area and it register/categorized as governmental,non-governmental and non profiti makin rganization (MoLSA 2011). As study conducted tajikistan (Asia) in 2018 most of the available rehabilitation services were located in urban areas and were particularly high lack in rural areas, finally the availability of assistive products (such as wheelchairs, orthoses or prostheses) for people with disabilities was limited across the country(Satish Mishra1 and 2018).

Among institutional based physical rehabilitation service provider prosthetics-orthotics center was a pioneer in Ethiopia. It was non-profit making organization which established in 1961 with the aims of providing physical rehabilitation services for persons with disabilities and they have different types of health problems. To achieving its organizational mission launch active administrative structure in 1991. According this structure the highest level official of the center was board. The members of board were appointed form differ in land ministry office such as ministry of labor and social affair, ministry of education, ministry of health, Ethiopian red cross and Ethiopian disability federation and center itself as board meeting munity. Decision making power of the center was delegated to all layers of the center means form highest level (board) to lower level (unit leader).(EMI 1991)

It has also produced and distributed various types and sizes of ortho-shoe, prosthetic, orthotic appliances, mobility aids and devices like wheelchair, waking frame, footwear supports and corrective and pain relief equipments by replacing imported raw material into local raw material. Its product was customized in to local environment most of the service like physiotherapy, prostheses, orthoses and ortho-shoe were impossible to access without referral. The mentioned services were accessible only for referral and afforded beneficiary. There was no single piece of service and production provided freely to beneficiary that means all service and productions of the center were marketable.

Rehabilitation was increase the productivity and personal participation of PWD in social and practical interaction with other people. So avoiding or reducing the challenge from provision of rehabilitation was increase the accessibility of rehabilitation for people with disability. If its goals were reducing or avoiding the dependence of people with disability from restriction availability were must as human right not choice. In fact, through rehabilitation service functional independence were restored or upturn. The restoration or upturn of client ability to his/her former environment and lifestyle was one of the most important objectives of rehabilitation.

In Ethiopia, as other developing country services were unmet and saturated in urban area means most of rehabilitation services neglected rural area. Certain were true in the case of prosthetics and orthotics center. Most of the rehabilitations services and productions were unapproachable on time due to various factors. The evidence was showed that lacks of skill man power from the market; raw material and finances were the challenge to inaccessibility and forces to reduce their production such as blind stick of the restorations in POC.

2.2. Physical disability and rehabilitation

Physical disabilities limit people's mobility and their ability to participate fully in society. (Sexton, Stills et al. 2015) it was any condition that permanently prevents normal body movement and/or control. 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 was common.(Berihu 2015)

According to Sastri (2014) as cited by Hiwot in 2016 the health status of people with physical disabilities often requires orthotics and prosthetic medical devices(Hiwot 2016). These act to support muscle weakness, immobilize or stabilize the joint, facilitate movement of tendons, remodel scars, remove restrictions on movement, and strengthen certain muscle groups to avoid distortions, or support other tools of everyday life. The provision of rehabilitation was important for reducing the need for formal support and enabling persons with disabilities to lead an independent life(Skempes and Bickenbach 2015)

There were vast growing numbers of people with disabilities in the world. The restoration or upturn of user ability to his/her former environment and lifestyle was one of the most important objectives of rehabilitation. Rehabilitation was essential to people with disabilities to participate in education, the labour market and civic life. People with physical disabilities often require access to prosthetics and orthotics services to aid their mobility and enable them to be active in society.

2.3. Physical rehabilitation service providers

Several bodies were offered the rehabilitation services across the world. Services can be provided by public, private (for profit or not-for-profit) and nongovernmental and philanthropic organizations.(WHO 2017) In Africa country vary kind of organization like government ,non-governmental organization are provided physical rehabilitation service (ICRC 2016) Most of the rehabilitation services were available in developing countries were specialized according to particular disabilities such as for people with physical or mental disabilities. Typically these services were operated by the government or nongovernmental organizations (Ronald Wiman, Einar Helander et al. 2002) According to Ethiopian ministry of labour and social affair physical rehabilitation services strategy enacted in 2011 thirteen governmental and non-governmental physical rehabilitation centers were provided the service with different levels of capacities.(MoLSA 2011)

2.4. Physical rehabilitation products

Various types of physical rehabilitation products were needed to provide appropriate physical rehabilitation services. International standard of prostatic orthotic services mentions the prostheses and orthoses product fabricated by using different components, materials and working methods. The products and methods should be appropriate to the setting. In order to fabricate high-quality prostheses and orthoses that require high-quality components, materials, consumables, tools, machines and other equipment, some of which are often imported. Regular exploration of the market and evaluation of alternative products, components, materials and consumables ensure that the most appropriate working methods and products are in use. Products are appropriate when they provide proper fit and alignment, suit the needs of the individual and

can be sustained by the country at the most economical price. Nationally agreed criteria help to assess the appropriateness of the available options and ensure that service providers offer the best mix and range of products for the local context. The mix may vary among and within countries and over time. Services provide with the combinations of basic, intermediate and advanced products that are prefabricated or custom-made, locally available or imported. The complexity of services ranges from the provision of an off the- shelf product fitted in one short session to custom-made products that may take days or weeks to make. (WHO 2017)

Orthotic and prosthetic devices, crutches, and wheelchairs were common types of devices which facilitate or enhance users' mobility. Prosthetic device was an externally applied device used to compensate for the absence or loss of a body structure and body functions. An orthotic device was an externally applied device to stabilize, improve, or restore impaired body functions and structure, related to the neuromuscular and skeletal system. Both prosthetic and orthotic devices can also prevent medical complications and impairments(Lina 2014) assistive devices were used to compensate or complement functional limitations. The range of complexity stretches from homemade crutches and walking aids to high-tech devices. Assistive devices can be classified based on their functions in helping individuals perform activities of daily life that were includes, personal care and protection, personal mobility, housekeeping, home adaptation, communication, information, and signaling handling , environment improvement, recreation, therapy and training, orthotic and prosthetic devices.(Ronald Wiman, Einar Helander et al. 2002)

Table 2.1. Physical rehabilitation products summarized in the following

Prosthetic and orthotic products	Other mobility products	remark
Lower-limb orthoses	Canes and sticks	
Upper-limb orthoses	Crutches	
Spinal orthoses	Standing frames	
Club foot braces	Walking frames and walkers	
Lower-limb prostheses	Collators	
Therapeutic footwear (diabetic, neuropathic and orthopedic)	Tricycles	
	Wheelchairs	

Source:(WHO 2017)

2.5. Physical rehabilitation services

Physical rehabilitation service, involves providing physiotherapy treatment and assistive devices such as prostheses, orthoses, walking aids and wheelchairs, crutches, sticks, walking frames, and tricycles together with the therapy that were enable disabled persons to make the fullest use of their devices. A physical rehabilitation service covers occupational therapy, speech therapy and rehabilitation medicine. Prosthetic and orthotic service provision was related to the technical interventions offered to individuals with disabilities.(ICRC 2012) prosthetic and orthotic services a were delivered by Prosthetist /orthotist who design, measure, and fit prostheses and orthoses, and by prosthetic/orthotic technicians who manufacture prostheses and orthoses, ideally under the direction of a Prosthetist/orthotist the provision of prosthetic and orthotic services requires both medical and technical knowledge on behalf of the clinician(Lina 2014)

According to international standards published by world health organization in 2017, services are delivered users-centered through rehabilitation multi-disciplinary team. Prosthetic and orthotic service delivery process includes; assessment, casting and measurement, cast modification and rectification, manufacturing of prosthetic and orthotic devices, bench alignment, static and dynamic alignment, finishing, and product delivery. Prosthetic and orthotic services also need to include follow-up and repairs of devices. The process of prosthetic and orthotic services delivery was described

2.6. Physical rehabilitation services accessibility

In fact, functional independence was restored or upturn through rehabilitation service. It plays vital role to improving the contributions of persons with disability in society. Physical restoration services were temporary or permanent services as needed after disability once happen. It was delivery to people with disabilities to recover their mobility and maintain for the rest of their lives. Therefore, providing, maintaining and improving quality and quantity of physical rehabilitation services demands long term commitment as well. These need integration with prosthetic and orthotic, and physiotherapy services in order to provide efficient restoration of people with disabilities to their optimal capabilities but the need are unmeet because of various reason.

Physical rehabilitation is one of the mechanisms that focus on the provision of assistive devices such as prosthesis, orthotics, wheelchairs and walking aids like crutch, walking frame, and the likes and physiotherapy services with the aims of improving movement of people with disability. Enhancing mobility are diminishes constraints on walking and promotes engagement of people with disabilities in various socio-economic activities in society. It empowers people with disabilities to get better access to health care, education, employment opportunities, and work and enable them to fully participate in the social, economic and cultural practices in their communities. This, in turn, contributes to the improvement of the quality of life of people with disabilities. (WHO 2017, ICRC, 2012, MoLSA, 2011)

Globally 80 % disabled peoples were live in the developing country but the accessibility of rehabilitation service are unmet based on the report.(WHO 2011) according to central statistics authority(CSA) report based on most recent national population and housing census conducted in 2007 from the total population of Ethiopia, were 864,218 PWDS out of which, 31.18% (269,463) have leg, hand and body movement difficulties.

Rehabilitation should be available to all people with disabilities who were normally resident in accordance with the provisions of the law as a human right not as favorability. They have the right to access rehabilitation service according to their need based on article 26 of un convention on the rights of persons with disabilities declared in 2006. But rehabilitation services were unmeet as need because of vary barriers. Globally 90 present of PWD neglected from the access of their need (WHO, 2017). According to an unpublished report of MoLSA in 2017 only 13.8 per cent of PWD were access their needs. The report was noted that the rehabilitation service needs of people with disability in Ethiopia were unmet as their needs due to various barriers. National studies on living conditions of people with disability conducted in Malawi, Mozambique, Namibia, Zambia and Zimbabwe revealed large gaps in the provision of medical rehabilitation and assistive devices. As cited by (Farida Garba Sumaila, Hadiza Abdullahi et al. 2018) , the number of people with disabilities were growing fast. The service gaps were vast. Disability-specific interventions can only reach and benefit a minority of disabled people who were in need of curative and rehabilitative services (Ronald Wiman, Einar Helander et al. 2002)

In Ethiopia according to MoLSA (2011), physical rehabilitation services were regularly available but the provisions of services were very limited and concentrated in the urban center. According to an unpublished report of MoLSA in 2017, 86.2% of PWDs ignored from the use of physical rehabilitation service as their needs these were capitals the provision of service unreachable. This report was noted that the rehabilitation service needs of people with disability in Ethiopia were unmet. Currently, thirteen governmental and non-governmental physical rehabilitation centers ware in the delivery of services with different levels of capacities including POC. From their physical location, most of the service users faced difficulties to reach the service providing centers. Particularly, the overwhelming people with disabilities living in rural areas can hardly access physical rehabilitation services. The existing physical rehabilitation centers were not adequate enough to deliver both the production and maintenance services for the devices due to their limited capacities compared to the demand.(MoLSA 2011) the study conducted on the challenges of providing pre-prosthetic rehabilitation in a rural area of South Africa showed prosthetic rehabilitation and service delivery in developing countries, especially in rural settings, was very challenging. Rehabilitation services were inadequate for meeting the needs of the PWD the most of service located in urban centers, a barrier to accessing services for the people living in remote rural area. (Satish Mishra1 and 2018)

2.7. Challenge of physical rehabilitation service provision

Rehabilitation should be available to all people with disabilities were normally resident in accordance with the provisions of the law as a human right not as favorability. They have the right to access rehabilitation service according to their need based on article 26 of UN convention on the rights of persons with disabilities declared in 2006. (UN 2006) physical rehabilitation service provisions were regularly availability and provided through various kinds of organization like government, non-governmental and non-profit making origination. But the needs were unmeet based on the standard announced by world health organization in 2017, 90% of PWD ignored from accesses of their physical rehabilitation service needs these capitals unreachable service provision for PWD as their needs. This means the access of physical rehabilitation are very poor in the world including Ethiopia. The provisions of service were unmeet due to the following barriers.

2.7.1. Lack of trained workforce

Human resources were still poor in quantity and quality in the rehabilitation sector. Suitable rehabilitation services remain virtually inaccessible to most people who need them. This was mainly because of a lack of rehabilitation professionals.(ICRC 2016) according to impact assessment studied in two west African countries Togo and Benin were point out a lack of trained personnel as barriers for inaccessibility of services faced on people with disabilities (Claude Tardif 2016) The scarcity of trained rehabilitation professionals like physiotherapists, occupational therapists, speech language therapists or specialists in physical medicine and rehabilitation prosthetics and orthotics professionals in Tajikistan were barriers to providing service.(Satish Mishra1 and 2018)

2.7.2. Cost of rehabilitation

The cost of rehabilitation can be a barrier for people with disabilities in high-income as well as low-income countries. Lack of financial resources for assistive technologies was a significant barrier for many people with disabilities(WHO 2011) most of those in developing countries do not have access to rehabilitation services due to a lack of resources and other various factors UNICEF 1988 as cited by Hiwot in 2016. The study conducted in Iran was show the cost of rehabilitation as important challenge to accessed rehabilitations service.(Kianoush Abdi1 2016) the impact assessment studied in two west African countries Togo and Benin were insufficient financial budget allocation to cover the cost of services point out as obstacles faced to access services by people with disabilities,.(Claude Tardif 2016)

2.7.3. Lack of strategic plan

The 2011 world report on disability, published by the world health organization and the World Bank, lists the obstacles faced by physically disabled people wishing to obtain physical rehabilitation services: the absence of a national strategic plan.

2.7.4. Environmental barriers

Challenges faced people with disabilities to access appropriate rehabilitation services because of non-existent or inadequate services (where services exist, they were often to be found only in major cities),(WHO 2011) , most disabled people need access to functioning rehabilitation services for the duration of their lives but due to geographical location (service were accessible in urban area) the service were inadequate in rural area (ICRC 2016) currently in Ethiopia, thirteen governmental and non-governmental physical rehabilitation centers ware in the delivery of services in urban area with different levels of capacities. Due to their physical location, most of the service users faced difficulties to reach the service providing centers.(MoLSA 2011)

CHAPTER THREE

METHODOLOGY AND DESIGN

3.1. METHODOLOGY

This chapter provides research design and the method that used to conduct this study. The content addressed includes the research method, research approach, data gathering and tools, the sampling method and sample selection technique, and data analysis techniques and tools.

3.1.1. Philosophical view

The researcher perspective about reality is constructivism, individuals seek understanding of the world in which they live and work. They develop subjective meaning towards certain objects or things. These meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrow the meanings into a few categories or ideas (Creswell, 2009)

Despite, a subjective reality and the need to see life as they live it, there is always a room for a reasonable judgment particularly in the course of analysis whilst developing this study document. There is no particular sense in limiting the facilities of the mind in any inquest. Meaning, a reasonable judgment is important and was employed as a mechanism of analysis added to opinion and imagination (Kenneth & Todd, 2011 as cite in Hiwot)

3.2. Research Design

An appropriate research design was essential to any research as it guides the process for collecting the desired data and also the process for analyzing that data. The general principle is that the research strategy or the methods or techniques employed must be appropriate for the questions you want to answer (Robert, 2003, p.13).

This study was conducted using single case- study design with qualitative method to organizing and explores in depth the challenges in pervasion of rehabilitation service for person with disability in Prosthetics-Orthotics Center.

According to Creswell (2008), qualitative research design was a means for exploring and understanding the meaning individuals and groups ascribe to the social or human problem. When detail description is needed to define and analyze human experience, qualitative research would be the right choice for the study (Marvast, 2004).

Qualitative design approaches to inquiry my study employed single case study strategy of inquiry. A qualitative case study was an approach to research that facilitates exploration of the phenomenon with in its context using variety of data sources (Baxter & Jack, 2008). The rationales behind used the case study approach is that, case study helps to uncover the realities of contemporary complex social phenomena while retaining the holistic and meaningful charactericts of real life events. That is case studies are appropriate if and when the research is concerned with uncovering contextual factors in phenomena and when boundaries are not clearly between the phenomena and the context (Yin 2003) The concern of this research fits in this description in that it is difficult to look for the case of challenges of the center without considering the context of the center in which these challenges were created. Without considering the contexts such as the organization of the staff, building of the center, the political situation, the nature and individuals with physical impairments; it is difficult to understand the phenomena of challenges in center. This reality makes qualitative case study strategy of enquiry best approach for this research.

3.2.1. Data sources

In this study both primary and secondary data sources were utilized. Primary data was gathered by using open ended interview, FGD and direct observation and documents review. These were done with the aim of ensuring the validity and trustworthiness of the study by gathering data from multiple sources.

The sources of secondary data were journals, books, published and unpublished reports in relation to the topic under study. The two basic data collection instruments were FGD and open ended interview guide.

3.2.2. Data collection methods

Qualitative methods study researchers typically gather Multi forms of data such as interviews, FGD, observations and documents rather than rely on a single data sources(Creswell 2009)

Before engaging in data collection activity, communicate with acting manager of the center. He permitted and facilitated everything to me to collect the necessary data that want.

My first data collection task was observation. First of all carried out a general observation about the situation of the center, beneficiary, and the staff members to have an overall picture of the status of the rehabilitation service provided based on the observation checklist. The observation was not one time task due to this took notes based on what observed each day throughout the whole process of data collection and analysis.

Secondly, just after the preliminary observation started to collect data through document review, open ended interview and FGDS. Document reviews of the center do not include the financial documents of the center. This is because of restricted by the center in order not to access such documents. Even though such limitations are observed the information which got through review of different documents of the center provided me with an overview of the center. After completion of open ended interview and FGD with participants.

The final stage was closure after the end of data collection and analysis. Like the day started collection of data in the center, meeting was made after end of data collection with the delegated manager of the center.

Data collection Instruments

To employ this research, data were collected from both primary and secondary sources trough open ended interview, observation, FGD and document review. This is because qualitative case study is an approach to research that facilitates exploration of the phenomenon with in its context using verity of sources (Baxter & Jack, 2008). In order to gather the primary information, open

ended interview, Focus Group Desiccation (FGD) and direct observations were used with in the center. Whereas to collect secondary information document review was used.

Interview: open ended interview was done with staff members and beneficiary. An interview guide for staff members and beneficiary, were developed before collecting the data. Interview guides were prepared in English and translated to Amharic and then translated back to English in order to avoid miss of meanings in the process of translation. Checkup of translation also involved professional peoples to improve the accuracy. The interviews employed open ended questions that allowed the researchers to probe further on the responses and get more details on each issue.

During the interviews tape recorder was used. Recorded the information of the respondents in order not lose important information. Note taking of both the responses to the questions and facial/ non-verbal information was also conducted.

FGDs: Consecutive FGDs were conducted with rehabilitated and staff members of the center. Like that of interview questions, open ended questions were prepared as a discussion guideline was prepared before the discussion. FGDs were conducted in order make possible comparison of data from discussions.

Observation: Observation was done after getting consent from the organization. Observation of the services which has been delivered by the rehab center to person with physical rehabilitations service (physiotherapy treatment, prostheses, orthoses, ortho-shoe, and component and mobility aid) was guided by the observation checklist. During the period of direct observation notes were taken on the points in the observation. While in the process of observation, services provider of the PWD were not informed about the observation in order to avoid deliberate actions and to be free from biases. According to Krueger and Newman (2006), if those being observed know the true purpose, they would modify their behavior which will make it impossible to learn from the situation.

Documents review: Reviews of secondary sources were useful before conducting the field of study. As a result attempt was made to review some materials related to the rehab center

functions such as, publications, books, journals, manuals and guidelines. This helped to have some background on the issue under study and to strength the primary sources.

3.2.3. Population Sampling Methods and Sample Size

3.2.3.1. Population and Sample Size

Sample size of this research was conducted by using a purposeful sampling with a willingness of participates. Accordingly open ended interview with six staff members (one female and five male), with six Beneficiaries (three female and three males) was done. Totally open ended was done with twelve individuals. In addition to open ended interview consecutive FGD were conducted. The FGD was conducted with twelve participants, five (three female and two male) rehabilitated clients of the center and three female and four male totals seven staff members. In general all participants involved in the study were 24 in number

Since the enquiry was qualitative, the findings of this investigation cannot be generalized because the sample is not representative. The only thing that determined the size of the sample was the saturation of information that gained from the participants of the study.

3.2.3.2. Sampling methods

The study was conducted in Prosthetics-Orthotics Center by using purposeful samplings with the willingness of participates. To achieve the objectives of the research participants were selected in collaboration with POC from staffs, beneficiary of the center. The selection of beneficiary was specially recommended by both the services provider and customers' service unit concerning their current status.

3.3. Method of Data Analysis

In analyzing the data collected through the above different data collection instruments, there were categorized into major idea for their basic research questions.

The data analysis for qualitative research generally categorized in to data collection, organizing data in some meaningful form, understanding and analyzing data, interpreting and presenting (Creswell, 2003, p.190). More specifically, there were three approaches that followed for the data analysis for this study.

Analysis of data that was collected through document also followed the same procedure. The researcher defined codes and began to develop his own themes to put the data into categories to help him analyze and sort and the data. So in order to analyze critically and interpret the findings, case analysis was applied in line with the findings from the direct observation, documents, interviews and FGD.

CHAPTER FOUR

FINDING AND DISCUSSION

4.1. FINDING AND DISCUSSION

The findings of the center which were grounded in data collected from the different data collection instruments (observation, focus group desiccation, interview and document review) and 24 participants were involved in this study. From both side participants' 90 % were familiars with experience of the center for more than five years.

4.2. Socio-Demographic Characteristics of Participants

The socio-demographic characteristics of all participants of the research (open ended interview, and FGDS) of the study were summarized in table as follows:

Table 4-1 socio-demographic characteristics of participants

Socio-demographic variable	Category	number	%	Remark
Sex	Male	14	58.3	
	Female	10	41.7	
Employment	Yes	19	79.1	
	No	5	20.9	
Educational status	Primary	2	8.3	
	Secondary	6	25	
	TVT	9	37.5	
	Diploma	5	20.83	
	Degree	2	8.3	

According to the table above, majority of the participants of the study were male, 14 (58.3 %) of the total 24 participants were male and 10 (41.7 %) were female. Since the sampling strategy employed by the researcher was purposive, no effort was done to make equal representation of both sexes except the care taken to achieve the purpose of the study. Articulation of gender issues were important to building appropriate intervention during decision making and help as data for the future research.

As to the educational status of the participants, majority 9 (37.5 %) of the participants graduated from TVTE (level 1 to 5), while none of them reported to be illiterate, 6 (25 %) attended secondary school education, 2 (8.3 %) attended primary school education, and 5 (20.83 %) were graduated in diploma and two(8.3 %) graduated in first degree. They were essential to understand and speak clearly according to requested and needed that were upturn the suitability of data.

Finally regarding to employments, majority of the participants of the study were employees, 19 (79.1 %) of the total 24 participants were workers and 5 (20.9 %) were unemployed. This indicates that the data were collected from the persons who know the reality of the issue in practices so it amplified the trustworthiness of data.

4.3. Ranges of Rehabilitation Services Provided in POC

The prosthetics-orthotics center was a non-profit making organization which established with the objective of providing institutional based physical rehabilitation services with physiotherapy treatment for persons with disabilities and other citizens who have different types of health problems. It could not register as governmental or non-governmental. But it carry out various kinds of legal activities like, producing various types product, selling of products , offering service and purchasing of raw material from both local and international markets. In addition to this it discharge their legal duties like collect withholding tax, paid employee income tax and pension contribution to concerned governmental body. It cannot had another source of income other than the amount collected from products selling and service rendered in other word in cannot had periodical budget or special fund (subsidy) form government, non-government and other donors.

Since 2017/2018, it provided various kinds' of physical rehabilitation services to its beneficiary according to their needs and produced a numbers of customized products which had varied forms and sizes. From its comprehensive products prosthetic, ortho-shoe, orthotic appliances, mobility aids and devices like wheelchair, waking frame, footwear supports and corrective and pain relief equipment's were few. Some products of one department serve other department as raw materials.

General products of the center were grouped in to orthopedics and component and mobility aid. Orthopedics products and service were classified in to prosthetics, Orthosis and ortho-shoes. Complete products and service of prosthesis were including Hip-disarticulation, through knee, Trans, femoral, t-tibia t-humeral t-radial and repair. The widespread products and service of orthoses were including trunk orthoses, upper Limb, Lower Limb orthoses, collar and repair. General product and service of ortho-shoe were included in soles, external shoe raise, elephantiasis shoes, hand slipper, kneeling pads and repair and etc.

Most of the service like Physiotherapy, prostheses, orthoses and ortho-shoe were impossible to access without referral. There was no service and production provided freely to beneficiary. The services of center were included repair of its product and similar products. The products and service of the center were categorized in to direct and indirect. Direct mean a product and service that were produced and provided to specific beneficiary in persons in POC like, prostheses, orthoses and ortho-shoe and physiotherapy treatments. Indirect means other supportive devices such as walking frame, Cipchair, and wheelchair, various kind of crunch, cotton stockinet, rubber tips those were sold to users or other .

In the meantime, 20,067 beneficiaries were got various kinds of rehabilitation service in center. Among 4357 (21.71 %) were direct, 15710 (78.29 %) were indirect. This service offered to beneficiaries under the three departments such as orthopedic, component and mobility aid, and physiotherapy services. The service delivered under component and mobility aid was called indirect service because the beneficiary was unknown. Enter services and products were summarized in the following table

Table 4.2 products and direct Services delivered under Orthopedic, Physiotherapy departments.

Types of service/product	Sex		*total*	%
	Male	female		
Prostheses	266	60	326	7.482
Orthoses	319	206	525	12.05
Ortho-shoe	654	503	1157	26.55
Physiotherapy	1538	811	2349	53.91
Direct sub total	2777	1580	4357	100

Source: annual report of (POC 2017/18)

According to the above table, among the direct service rendered, 326 (7.482 %) were prostheses, 525 (12.05 %) were orthoses, 1157(26.55) were Ortho-shoe and 2349 (53.91 %) were Physiotherapy. From the Total beneficiaries of direct services were 4357, majority were 2777(63.74 %) were male and 1580 (36.26) females, in detail. From 326 prosthetics users 266 male and 60 female, 525 orthoses beneficiary 319 male and 206 female, 1157 ortho-shoe users 654 male and 503 female and among 2349 Physiotherapy treatment users 1538 male and female 811 the number of clients in the waiting list 179

Table 4.3 product and indirect Services delivered under component and mobility aid departments

Types of service/product	*Total*	%
Wheelchair	60	0.382
Wood crunch	3401	21.65
Metal crunch	1823	11.6
Rubber tips	9949	63.33
Repair	477	3.036
Total	15710	100

Source: annual report of (POC 2017/18)

According to the above table, total beneficiaries of indirect services were 15710. Out of which 60 (0.382%) were wheelchair, 3401(21.65 %) were wood crunch, 1823 were Metal crunch, 9949

(63.33 %) were Rubber tips, 477 (3.036 %) were Repair. it articulated the existence of comprehensives services in the center.

4.4. General overview of Studies

Center based physical rehabilitation service provision start since Emperor Haile-Selassie regime in metropolitan of Ethiopia. Prosthetics-orthotics center was a non-profit making organization which established in Addis Ababa in 1961 with the objective of providing physical rehabilitation services and physiotherapy treatment for persons with disabilities and other citizens who have different types of health problems. It remains without legal status means it could not register neither as governmental nor private. It has to produce and distributed various types and sizes of products and offered verity of service to its clients based on their need. The fabrications of products and provision service were challenged by various kinds of barriers. Each production and service and barriers were mentioned in the following topics.

4.5. Type of Product, Methods of Assembly and The Way of Service Provision in POC

4.5.1. Types of product

The document reviewed (annual report, price list, annual plan, products list) by researcher were showed the various kinds of physical rehabilitation products were fabricated in prosthetics orthotics center. A numbers of products fabricated in the POC were band together in to orthopedics and component and mobility aid. Orthopedics products and service were characterized in to prosthetics, orthoses and ortho-shoes. Products of component and mobility aid were clustered into metal, thermoplastic and wood. In addition to producing comprehensive range of products it offered repair services to its products and other similar device.

According to one of senior staff description

> *"The main rehabilitation modalities of our center were physical rehabilitation services, such as prostheses, orthoses, ortho-shoe and other component and mobility aid like different types of wheelchair, Cipchair, various kind of crunch (wood and metal) toilet and many tools were produced in here."*

As other interviewee staff participant who was employed in 1974 according to Ethiopian calendars explanation

> *"Multi types of physical rehabilitation tools and equipment were fabricated in here. Currently our products segregated into different unit such as prosthesis, and orthoses, thermoplastic, metal, wood, and ortho-shoe. Any types of physical rehabilitation device were produced in this center means from simplest insole up to hip-disarticulation, various kinds of wheelchair, Cipchair, toilet chair, various kinds of crunch such as wood and metal and many types of equipment those were important to provision of services."*

Other two interviewees of the staff they have more than five years' experience in the center were described the types of device produced in POC in line of above mentioned. Most of FGD participants enumerated the above listed products in detail during dissociation. Various types' of devices which were produced under orthopedic and component and mobility aid of POC were based on data collected from multi sources (document reviewed, interview, FGD) presented in detail as follow.

a. Orthopedic department products

A number of rehabilitation products were shaped to fit partial or total missed part of body and braces were common. Several types of orthopedics devices were fabricated under this department. Total products of orthopedics were separated in to orthoses, prostheses, and ortho-shoe each was mentioned as.

I. . Orthoses produces

Many kinds of products were shaped under orthoses. The total productions of orthotics were band together into low limb, upper limb and spinal orthoses.

✓ Lower limb orthoses: are an external device applied to a lower body segment to improve function by controlling motion, providing support through stabilizing gait, reducing pain through transferring load to another area, correcting flexible deformities, and preventing progression of fixed deformities.

✓ Upper Limb Orthoses: are externally applied devices that help restore or improve function and also fix structural characteristics of the nervous and the musculoskeletal systems of the upper extremities.

✓ Spinal orthoses: are supportive device applied to the back (and often encircling the trunk) that limits the movement of the vertebrae, alleviates pain, or unloads mechanical stress, correct for simple and accommodate sever deformities.

II. Prosthesis

It was one among devices produced under the department of Orthopedics. Prosthesis was artificial devices that were produced to fit partial or total loosed lag and hand. The devices were produced under Prosthesis were clustered in to Lower-Limb and Upper Limb. The following were few.

✓ Upper limb prosthesis

Upper limb prosthesis was used to replace the missing part of the upper limb. Typical example of Upper limb prosthesis includes Shoulder disarticulation, above elbow, elbow disarticulation, and below elbow disarticulation.

✓ Lower Limb prosthesis

Lower limb prosthesis is used to replace the missing part of the lower limb. Typical example of LLP includes Hip Disarticulation (HD), Above Knee (Ak), Knee Disarticulation (KD), Below knee (BK), Syme Prostheses and Partial Foot (PF). Some of the lower limb prosthesis products of the POC include the following

III. Ortho-shoes

Several types of ortho-shoe device were fabricated to fit the need of beneficiary. The following devices were assembled under ortho-shoes.

Tables 4.3. The apparatus produced under ortho-shoe

No	Description	No	Description
1	In soles	7	Denis Brown S. shoe
2	Insole Rigged	8	Hand slipper
3	External shoe Raise	9	Kneeling pads
4	Ortho-shoes without cast	10	Chop art with PP
5	Ortho-shoes with cast	11	Ortho-shoes repair
6	Elephantiasis Shoes		

Source: annual plan (POC 2018/19)

b. Components and mobility aid department

Different kinds of assistive product like wheelchair, Cipchair, toilet seat, multi kind of crunch metal and wood, waking frame were produced. In addition to this finished assistive product various types' tools and equipment were produced under this department for orthoses and prosthesis service delivered. Many apparatuses that were fabricated under this department were serving orthopedic department as raw material to deliver the service. Entire products of this department were clustered in to wood, metal and thermoplastic. Comprehensive products of thermoplastic and some part of metal were a key to rehabilitations service offered. Total products of this department based on data gathered from different source summarized in the subsequent table,

Table 4.4. The apparatus produced under component and mobility aid

Metal product		Thermoplastic product		Wood product	
Nº	Description	No	Description	No	Description
1	Ortho side bar	1	Crutch handle large	1	Auxiliary crutch large
2	Fractural knee brace	2	Crutch handle medium	2	Auxiliary crutch medium
3	Free Joint	3	Crutch handle small	3	Auxiliary crutch small
4	3 Wheel rigid W/chair	4	Crutch tips with pp	4	Ex. Large auxiliary crutch
5	Ortho design wheel chair	5	EVA compact foot	5	Custom stick
6	3 Wheel children W/chair	6	EVA cosmetic hand	6	curved handle stick
7	Metal elbow crutch	7	EVA cosmetic shank	7	Balance board
8	Adj metal elbow crutch	8	Concave cylinder Long	8	Cp-chair
9	Adj Walking frame-	9	Concave cylinder short	9	Arm rest
10	Adj Walking frame with wheel	10	Concave disc	10	other products
11	Hip disarticulation Joint	11	Convex disc	11	Auxiliary crutch repair
13	Toilet seat wheelchair	12	Socket cup big	12	Stick repair
14	Old model crutch	13	Socket cup small		
15	Metal cone stick	14	Conical extension cup		
16	Knee Joint axis free	15	Complete Knee joint medium free		
17	Knee Joint axis with lock	16	Complete Knee joint medium lock		
18	Other Production	17	Crutch handle old model		
19	Wheel chair repair	18	Wheelchair break handle		
20	Crutch repair	19	Pipe bushing		
21	Side bar repair	20	Crutch handle repair		
		21	Other products		

Source: annual report(POC 2017/18) annual plan (POC 2018/19)

Based on the data collected from document review (price list, , and annual report), interview, FGD and observation of researcher the above mention devices were produced in prosthetics – orthotics Center to deliver physical rehabilitation service. All products of the center were

clustered in to orthoses, prosthesis and ortho-shoe, metal, thermoplastic and wood. Orthotic and prosthetic products used most of thermoplastic products and some of metals products as raw material like EVA compact foot, EVA cosmetic hand, EVA cosmetic shank, concave cylinder long, concave cylinder short, concave disc, convex disc, socket cup big, socket cup small, conical extension cup, complete knee joint medium free, complete knee joint medium lock hip disarticulation joint, knee joint axis free, knee joint axis with lock, side bar. Deferent types of device fabricated under Prostheses were grouped in to lower limb and upper limb prostheses, product orthoses were categorized in to lower limb, upper limb and spinal orthoses and wheelchair, Cipchair, various kinds of crunch (from wood and metal), and walking frame were produced in POC.

Generally various types of components were produced for physical rehabilitation provision in prosthetics-orthotics center. The products of the POC were boldly categorized in to prosthetic, orthotics and component and mobility aid but the fabrication were challenged by various barriers.

4.5.2. Methods of Produce

The above mentioned devices based on data collected were clustered into orthoses, prosthesis and ortho-shoe, metal, thermoplastic and wood were produced by using different procedure as data gathered from multi sources interview, FGD, and document reviewed and physical observation of investigator. Interview participants of unit head describe the issues as

> *"We produce vary types of apparatus by using locally availability raw material like wood, play wood, glues, nail, rubber tips and etc. most of this raw material were easily accessible from local markets "*

According to Acting manager of the center explanation during conducting the interview with researcher

> *"Most of our products were fabricated by using local accessible raw materials like metal, wood, ergando, and leather, wheel, cotton stockinet etc. In addition to*

using local available raw materials we adapted our products in to county environments."

The data gathered during Focus group desiccation and observation ratify the above mentioned facts and among the products of the center wheelchair, walking frame, Cipchair, several kinds of crunch wood and metal, prosthetic, orthotics and ortho-shoe products were customized partly and totally in to reality.

According to the above data the products fabricated in prosthetics-orthotics center under prosthetic, orthotics and component and mobility aid were produced by using different range of local materials and its products were adapted in to local environment. New standard published by WHO in 2017 encourages customization of rehabilitation products in to local environments.

4.5.3. The way of service provision

In addition to fabrication of the physical rehabilitation component vary kinds of rehabilitation services were rendered in POC. An investigator randomly reviewed personal file (history card) of five clients from each services such as physiotherapy, prostheses, orthoses, and ortho-shoe. Referral paper of health institution and price estimations cost were attached on each beneficiary personal file (history card). The researcher in addition to history card of beneficiary attained the clinic during assessment.

As an interviewee beneficiary of prosthesis statements

"For first time I visit this center in 2008 to access prostheses device. At time I had a money pay to service but due to lack of health institution medical referral I got back in to my home without accessing the service. acquired service After several month by present health institution referral and affording the cost of services later three month on the date of appointment"

Other participant of the interview describe it

> *"Health institution referral only not enough to access the service available in here affording the service price was mandatory. In simple word if you cannot afford the cost of service offered impossible access it by referral entitlement only"*

According to interviewee participant staff said

> *"To access the service of our center must be meet these two criteria, affording the cost of service and submission of health institutions referrals was mandatory that means new intern of the center in addition to pay the expenses should be offer the health institution medical referral to obtain service.*
>
> *Natures of physical rehabilitation services provision was very complex and need passing many process like Assessment, casting and measurement, cast modification and rectification, manufacturing of prosthetic and orthotic devices, bench alignment, static and dynamic alignment, finishing, and product delivery and necessitating following customer needs because of many reason among dissimilarity of needs "*

Other nine participants of interview and almost participants of the FGD support the above mentioned fact without difference. According to data collected from various sources physical rehabilitation devices and services in POC were available for only referral and afforded beneficiary. Rehabilitation services supplier was did not cover any cost of restoration even if it did not subsidize any service and devices. The services were delivered based on customer needs. The investigator ratifies these from document reviewed, FGD desiccation with users' and staff, interview. In POC, physical rehabilitation was provided institutional based users centered approach.

An international Standard published through world health organization in 2017 was articulate the way prosthetics-orthotics service provisions under standard number 39 any service being delivered based on user needs in all ways means users-approach. Pursuit to the finding of this research most of the service in prosthetics-orthotics center actuality delivered based on user

interest as much as possible. The services in this center provided institutional based beneficiary center approach by using material available in center and explain the result of assessment and necessary intervention in clinic (clinical assessment observation of investigator). The investigator cannot get any a written user policy prepared in any local or other than local languages that were describing the relationship between them. Service provision process in POC included Assessment, casting and measurement, cast modification and rectification, manufacturing of prosthetic and orthotic devices, bench alignment, static and dynamic alignment, finishing, and product delivery. A prosthetic and orthotic service has been also included follow-up and repairs of devices. (Observation and personal history card review)

4.5.4. Accessibility of the service for beneficiary

The data gathered from different corners were showed regularly availability of service. The service of the center physiotherapy, prostheses, orthoses, ortho-shoe did not offered without referral and free for physical rehabilitation services seeker.

From Focus group desiccation participants, eleven out of twelve, available services like physiotherapy treatment, prostheses, ortho-shoe and orthoses were did not accessible for free service seeker, non-referral beneficiary and on time means without appointments. Eight out of twelve FGD participants except referral, the same were true to component and mobility aid devices such as wheelchair, walking frame, Cipchair, toilet chair, and etc. The reviewed customers' record books by researcher during data collection were showed on time unapproachability of services. The interviewee senior staff of the center was describe the issue as follow

> *"The goals of our center were providing the fullest physical rehabilitations service to our beneficiary as their needed and on time but various barriers limit on time provision of service. Especially prosthesis and orthoses services and assistive device like wheelchair, Cipchair and toilet chair were impossible accessing without adjournment*
>
> *Lacks of resource (human and budget), technology, lack of raw material, lack of well-established system were the main barriers for this gap"*

One of the interview participants of beneficiaries specified that:

> *"I am student when start using prosthesis device in here, currently am an employee in governmental office, simply am a family with POC because I use the service for more than 20 years in this center. My life was dark without this device the cost of service was increased from time to time. Currently service charge of the center were very expensive difficult to me affording the cost of my rehabilitation. If expensive to me, how to afforded unemployed peoples the cost of service? In addition to the expensiveness of the cost hard to getting the service without appointment "*

The document reviewed (annual report and clients recorded book) were articulated waiting list 179. Waiting list showed on time inaccessibility of services. Generally the services were regularly available for the beneficiary of the center but due to vary challenges it does not accessible to their beneficiary without adjournment as soon as on time for the beneficiary they full fill both criteria (Have the funds for and medical appointment) of the center as data collected from Interview, FGD and document review .

4.6. Major institutional and organizational challenges affecting the performance of the Prosthetics-orthotics Center.

This study was identified the barriers of providing rehabilitation services for person with disability in prosthesis and orthotics center. The main challenges in providing rehabilitation services include: Structural barriers and Absence of legal status, Resources and system challenge, Inaccessibility and Sustainability. I tried to identify the challenges from the perspective of providing rehabilitation services.

4.6.1. Structural barriers and absence of legal status

To realizing organizational objective the center was launched the current organizational structure in 1991, based on this configuration, the Center was arranged into two main divisions; Technical and Production Division, and, Administration & Finance Division. The Technical and Production Division was a line division, while Administration & Finance Division was the supportive

division. Each division classified into various section and unit. Pursuit to this structure the higher level body of the center was board of directors, however, Active organization structure, and other related documents reviewed by researcher did not insight the linkage of the center with somebody such as government or private. Absences of the linkage with somebody through its organizational structure make the center status less. Vary years of organizational annual report including 2017/18 annual report were recognized this issue as challenge.

One of the board members who participate in this study described the issue as

> *"Among the board member one was me but I did know the structural and legal relationship of my office and POC. Board members were appointed from different ministry office of the country and from other such as ministry of labor and social affair, ministry of health, Ethiopian Red Cross association, Ethiopian disability confederation and POC. In addition to this a person appointed by ministry of labour and social affair was immediately became a chairman of board the center was secretary the other were members"*

As other interviewee staff who serve the center for more than fifteen year, mentions it as follow

> *"Currently in addition to my regular duties I serve the center as members of management but I never know the position of the center means governmental or NGO. Due to this all staff members including me in confusion and feel insecurity of jobs."*

From other six interviewees four staff and two beneficiaries were going in line with the issue mentioned above. The majority eight out of twelve FGD participants were highly criticized the institutional structure that makes the center without linkage of governmental and non-governmental body. The structure of the center was the main cause for government miss-treatment of the center. Mistreatment were made it blindness from governmental policies, legislation, budget and subsidiary, monitoring and evaluation, performances audit, and recommendation and attention. In addition to this absence of direct relation with specific governmental office or other NGO through structure was make organization out of legal status means the organization was did not registered as governmental and NGO. Absence legal status

made the center dependents of individual than system. One of the discussant of FGD asked the following question about POC and board office relationship.

"What was the legal relationship between board and POC and

Who was the owner of the POC?"

Active organizational structure did not inform the relationship of POC and board member's office and criteria of board member selection and their mandate. Other documents reviewed by investigator during data collection employees of the center were governed by employment and employers' proclamation no 377/2003 and agreement reached between employers and fundamental employment association since 2017. Discipline case of employee was entertained by using federal government civil servant discipline directive.

The Data collected from different source (interview, FGD and documents) were explores the issues means conform the issues. Absence of legal status was the basic cause for mistreatment of POC by governments and organizational structure, lack of legal status was barriers for rendering services in POC. But the study conducted since 2016 by Hiwot in Addis Ababa University social work department in Post graduate studies labeled the center as governmental organization(Hiwot 2016) and physical rehabilitation service strategy promulgated by inland ministry of labor and social affair in 2011 was labeled the centers as non-governmental institutions however the result of this research was showed against that research and strategy means the center did not have legal status. The only institution that were Operate their regular activities and discharge their legal duties under the law like employments income tax and pension contribution without legal status until the date of data collections.

It didn't have legal status as public institution and private institution in legal manner. So the center was not governmental and non-governmental institutions. Due to its organizational structure arrangements mistreated or neglected by government from budget and other support like subsidiary and the higher authoritative body support.

On the other hand most of organizational nature points out the review of new public management approach and principles but Ethiopian socio-political economy were problematic for application of new public management review.

4.6.2. Resources and system challenges

Organizational resource and system were vital to providing appropriate service to the beneficiary but the result of these findings was displayed it as challenge of providing rehabilitation services to people with disability in POC. The document reviewed (employee Profile, salary scale, and other legal document available and annual report) during data collection the center were provided rehabilitation service by employing 83 employments out of which 71 were permanent and 12 were contract workers. Among the total numbers of employee only few professions were provided physical rehabilitation service in the center. Only six were professionals three diploma holder in physiotherapists, two orthopedic technician one level three and one level four and one was diploma holders. Other service providers were acquired skill through practices.

In addition to this lack of formal education, developmental training (long, Medium and short) in the center. There were no training offered for workers during budget years until this data were gathered. The ways of workforce organized, absence of promotion system, and, inappropriate distribution of work and low salary scale (lowest for cleaner #711 and for managers #6232 initial) were a challenge faced for the lack of Skill man powers.as data gathered from document review . This center did not first choose by technician because of, poor working environments, low salary scale and lack of training according data gathered from FGD, review of document,

Fours from six interviewees of staff members work for more than five years in the center and six from seven participants of the FGD from the date of join the center until the date of conversation did not got any training (even one day training) in this position yet and from the total staff 80 % of employee were not change the position in promotion. The participants of the focus group dissociation in addition to the above mentioned challenge identify other barriers which affect the fabrication of the device like technology, work environment and lack and absence of raw materials.

According to one senior staff interviewee describe the issues as

> *"Lacks of Resource human and non-human were high fight for our center. Among this obstacle Lack of trained workforce such as orthoses technician, prostheses technician, wheelchair technologist, accountant, secretary, social worker and office equipment and layout, infrastructure, vehicle, Technology, work environment, the total cash asset of the center were around eight millions from this cash seven million cannot revolved simply we had lack budget , shortages and absence of raw material from local market and absence of system like promotion, customer service, employment, , etc. were common*
>
> *Specially EVA shit, buckle, Round PIP 18, 20,, POP bandage, Sombo wood, hollow lath steel 38* and other were highly challenge the center to meet need services on time."*

This barrier specified in to several-level including: Human and non-human resources, and system.

4.6.2.1. Human Resource challenge

Professional personnel were one of the most vital aspects to providing proper rehabilitation services for seekers but according to data gathered from diverse data lack of qualified professionals from the market. The suppliers cannot meet market needs due to absence formal education in the field and developmental training including capacity building training providers (short, long, medium) and, unavailability upgrading education opportunities for professionals, and law scale salary of the center were serious barriers for providing rehabilitation services in POC. This Barriers was hampered the access of appropriate physiotherapy treatment, prosthetic and orthotic and other service. The previous data 2011, report of world health organization, and standard published since, 2017 by WHO, and annual report of 2016 ICRC and research conducted in India support the result those lack of trained profession. In addition to that lack of capacity building training, low scales of salary were the cause to for the issue in POC.

4.6.2.2. Non-human resources challenge

The finding was describing non-human resource, as one prominent challenge at Prosthetics – orthotics center to providing the services. It regarded as budget, Technology, raw material, enumerated in details

i. Budget

The above data articulated budget as challenges, there were no periodically financial resources allocating (budget) and (aid) granted to the center from government, non-government, and private individuals donors and humanitarianly institution for rehabilitation services delivery and device fabricated. The main budgetary source of the center was only revenue collected from service rendered and selling of products. Currently the center was revolve less than one million and has seven million in time deposit account.

Lack of annual budget and special fund (subsidiary) from cornered body were key barriers on service brought in POC, it upturn the negative impact of organization operation and availability of serves and products. In addition to this lack of office equipment, office furniture; infrastructures were other identified challenges to rendering the physical rehabilitations in POC.

ii. Raw Materials

Among non-human resource challenge identified through this study finding was absence and lacks of raw materials were one. Absence or Lack of raw materials was problematic issue to providing appropriate rehabilitation service in POC. EVA shit, buckle, Round PIP 18,20,, POP bandage, Sombo wood, hollow lath steel 38*4 and 20, speed rivet, steel rivet Elastic scrap ,non-waving ,imitation lazar ,Velcro ,lop Iren, were an identified raw materials that absent and lacked in market.

iii. Technological

In current ear technological innovation were very fast. The data gathered from diverse source that were stated above were marked old-fashioned machine of organization were obstacle for provided rehabilitation services to their beneficiary. Standing from this old-fashioned faced to

lack of spar part and skill man who repair it. The technological adaptations and innovation in the center remain in the position of before twenty years. Furthermost of the machines become out dated and most Vehicles were serving the center for more than fifteen years in the POC. Other supportive activities like stoke controlling, cost estimation were performed manually.

4.6.2.3. Lack of System

It was another barrier that was identified through this study as data stated above. Organizational activities were dependent on the individual than system. Nonexistence of well-established system was influence the performance of the center negatively. Absence of clear promotional, hiring, firing, monitoring and evaluation, financial, customer handling system were barriers to service provision. In addition to this absence of other than Operational Plan (annual plan) in other word absence strategic plan was the barrier for progress of the services in POC.

4.6.3. Accessibility and Sustainability

Restoring was important resolutions to aggregate the overall participation of peoples with disability .The physical rehabilitation services were frequently offered in prostatic-orthotics center however the provision were challenged in different ways. Multi barriers which identified and mentioned above under 4.6.1 and 4.6.2 were upturn inaccessibility of services. In addition to the barriers mentioned above the following were amplified inaccessibility and unsustainability of the services.

One participant of the interview describe the issues as follow

> *"The services were easy to get to our referrals beneficiary; they afford the fee of services on the date of appointment not on time. We assign them to offering the service in other day due to lack of human resource and others*

> *I have a suspicion on the convenience of the service and products in the upcoming if challenges were up in the air because countless products were broken up due to absence of profession and lack raw materials example blind strikes and tricycle"*

Another service provided mention it

> *"With the exception of physiotherapy testament and crunch, greatest of device and services were not easily reached before three month for new referrals afterward assessment of multidisciplinary rehabilitation team because of multi barriers like shortage or absence of raw materials, absences of referral and expensive ness of services."*

A document reviewed by researcher customer record book displayed a number of waiting lists. Annual report were recognized more than one hundred waiting list, due to absences and lack of raw materials and its always increment, pathway of referrals, expensiveness of rehabilitations services price , periodical budget, remaining of technology and human resources as barriers. Greatest participants of, FGD, in addition to the barriers point out above the offered service were not nearby for non-referral and free service inquirer.

The data collected from a number of springs disclosed that the access of suitable assistive products and services was problematic in a lot of barriers. This obstacle includes lack of Professional personnel, expensive ness of cost of rehabilitation service, and outdated of the machines, lack of raw material. Variety Global institution report and scholar research capitalized unmet of rehabilitation services. This was reality of the world today. The research conducted in several countries like were inspire the same results but the reason were be different.

i. Lack of Professional Personnel

Wellbeing trained workforces of rehabilitation were offered a lot of quantity and quality services professionally as needed. Provisions of proper rehabilitation services were empower disabled persons to lead independent life, upturn productive and participation of them in society. Comprehensiveness rehabilitation services and coverage remains a problematic due to lack of skill manpower. Absent or shortages of trained human resource rehabilitation service providers or in very small numbers, were key barriers on approachability of available physical rehabilitation service like orthoses, prosthesis, and physiotherapy treatments and other indirect products like wheelchair, Cipchair, walking frame, in POC. 2011 and 2017 world health organization report and 2016 ICRS reports and Ethiopian labour and social affairs strategic plan

(2011) and The study conducted on Disability and rehabilitation in Tajikistan (Asia) n 2018 was show scarcity of trained rehabilitation professionals as challenge through support this result.

ii. Cost of Rehabilitation

This was one challenge for provisions of rehabilitations service in POC. People with disability was poorest of poor in the other hand rehabilitation services fee was expensive. According to this finding the cost of rehabilitation service was a barrier for people with disabilities that mean the beneficiary shall meet the expense of rehabilitation services to access otherwise there was no manner to access the service in POC. Lack of financial resources was a substantial barrier for a lot of rehabilitation enquirers to accesses the service. If they have shortage of money they limited form the access of rehabilitation service delivered in POC. The center did not cover any services fee so; People with disabilities or their families should be paid for the devices themselves. The reports of USID and the research conducted in India was indicated the same results.

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CHAPTER FIVE

CONCLUTION AND RECOMMENDATION

5.1. CONCLUSION

Disabilities associated with rehabilitation services. A lot of disabled peoples do not have equal access to health care, education, and employment opportunities including disability-related services that necessitated to them. This exclusion may be arising from absence or lack proper rehabilitation intervention. The right restoration interventions were upturns overall participation of disabled in society however the needs were unmeet in in vary ranges.

In Ethiopia, like other developing state rehabilitation services were saturated in urban area. Among urban centered Physical rehabilitations services provider Prosthetics –orthotics center was oldest. It has to been fabricated and provided center based physical rehabilitation service for persons with disability. The Products of POC were included orthotic prosthetic devices, ortho-shoe various kinds' of crutches, wheelchairs, walking frames, Cipchair and etc. The services were accessible only for referrals and afforded clients, and, institutional based client approach. Most of the products that were fabricated in POC were adapted in to local environments of inland and provision of prosthetic and orthotic services requires both medical and technical knowledge.

According to international standards prosthetic and orthotic service delivery includes; assessment, casting and measurement, cast modification and rectification, manufacturing of prosthetic and orthotic devices, bench alignment, static and dynamic alignment, finishing, and product delivery. Prosthetic and orthotic services also need to include follow-up and repairs of devices. The services rendered process of POC much with this.

Accessibility of rehabilitation services was essential for people with disability to participate in social and civil life. Accessibility of rehabilitation services was very poor in the world, only one person was access the rehabilitation service among ten. Inaccessibility of physical rehabilitation services were excluded them from accesses of mainstream in the society. Appropriate physical rehabilitation services provisions were very poor in many developing countries like Ethiopia in many barriers.

This study, identifying the challenges in providing rehabilitation services in prosthetics orthotics center. The main challenges in provision of rehabilitation services in POC, includes: Structural barriers and Absence of legal status, Resources and system challenge, lack of Accessibility and Sustainability

5.2. RECOMMENDATION

1. Identify Organizational legal status according to country law. Governmental, non-governmental, if any or stargazing its autonomy based on the review and principle of new Pubic management (NPM) approach.

2. Improve organizational human resource capacity. Human resource capacity can be improved through formal education and training (long, medium, and short) and recruitment. . A review of the knowledge and competencies of staff in relevant areas can provide a starting point for developing appropriate measures to improve them. Manpower generation by promoting new courses and initiating appropriate upgrading courses will address the problem of absence and shortage of manpower in long run.

3. Provide sufficient finance to improve organizational affordability. Build cost effective or subside rehabilitation service provision mechanism to upturn the availability and accessibility and sustainability of organizational products and services through creating different kinds project to obtain adequate and sustainable funds from various spring (national and international organization/donor) to remove financial barriers of the center.

4. Updating organizational system. Reform organizational arrangement and operational tools ,procedure, protocol, into suitable for current world based on scientific research through preparing short, medium and strategic plan, to adapting old-fashioned of the organizational technology into updated technology etc.

5. Offer course of rehabilitation regularly in TVTE and higher education. Offering rehabilitation course in TVTE and higher education institution of government are not optional to produce medium and higher level rehabilitations workforce. The needs of rehabilitation services are rises from time to time in many reason amongst the progressive nature of world population are one. Current International organizational report and scientific research of academicians' in both developed and developing county are display the needs of Rehabilitation services are unmet in different rates in the world so offering this course has multi benefit to government and citizens like creating job opportunity nationally and internationally to citizens and meet the needs of unmet arise from lack of trained personnel.

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Annex

Informed consent form

Dear respondent: - my name is Bonsa Wakjira Boka. I am from the school of graduate studies at Addis Ababa University. I am currently collecting data for my thesis project entitled "the challenges in providing rehabilitations service for people with disabilities in Ethiopia: Empirical evidence from prosthetics-orthotics center" the aim of this study is to assess the challenges faced in providing physical rehabilitation services for persons with disability in POC based on the findings of the study. I kindly request you to give me your time to explain about the study and being selected as the participant.

The participants of the study will be staff members who work in the center, rehabilitated clients and family members of the clients. The respondents communicate with either Amharic or English or Afan Oromo and have some willing to participate in the study.

I will do one to one interview. During this process, i would like to assure you that your identity will not disclosed to anyone. This is to protect your privacy and confidentiality of the information you provide. I will use tape recorder to avoid wastage of information and to correctly handle the conversation we did and finally after completion of research the notes and records will be destroyed.

Respondents have the right to not respond to some questions that they are note clear with or quitting participation at all if they are not comfortable with. However, in other cases the respondent's honest and right answers to questions are very essential to achieve the objective of the research.

By signing this form, i agree to participate in this research, under the provided conditions

Name of the respondent (pseudonym) ----------

Date----------

Signature----------

If you have any doubt or questions in the process of inquiry you can use the following address to contact me

Mobile number: - 0922-45-81-03/0911-26-14-39

Email: - bonawakjira@gmail.com

Thank you

I. Interview questions for participants

Socio demographic characteristics of the participants

Sex----------

Educational background……..

Position in the center----------

1. What types of products are provided in POC?
2. How to produces the devices?
3. What types of service are offered in POC?
4. How to provide the service?
5. The services of center are accessible to their clients?
6. All services are available and affordable for beneficiary?
7. Did you have the doubt on sustainability of service or product? If your answer is yes or no why?
8. What are the major challenges to fabricating the device?
9. What are the major challenges to providing the services to beneficiaries in the center? Pleas list it
10. Is there anything else that you can add?

Thank you

II. Focus group discussion participants' guidance

Socio demographic characteristics of the participants

a. Educational status: 1. Illiterate 2. Primary 3. Secondary 4. Level 5. Diploma 6. Degree 7. Above

B. Employment status: 1. Employee 2. Unemployed

1. What types of product are produced in the center?
2. How to produce the device?
3. What types of service are provided in the center?
4. How to offer the rehabilitation service to clients?
5. The services of center are accessible to their clients?
6. All services are available and affordable for beneficiary?
7. Did you have the doubt on sustainability of service or product? If your answer is yes or no why?
8. What are the major challenges in providing the services to beneficiaries in the center?
9. Is there anything else that you can add?

Thank you

III. Observation checklist

1. The situation of the center
2. Work environment
3. Organizational layout
4. The way of service provision
5. Client professional relationship
6. Methods of assembling
7. Rehabilitation clinic team situation