



Addis Ababa University

College of Education and Behavioral Studies

Department of Special Needs Education

**The Practice, Challenges, and Opportunities of Braille Skill
Training for Adults with Late Visual Impairment in Addis
Hiwot Rehabilitation Center**

By Meskerem Behailu

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**This thesis is submitted to the Department of Special Needs
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ABBREVIATIONS

AHRC:	Addis Hiwot Rehabilitation Center
CPRD:	Convention on the Rights of Persons with Disabilities
UN:	United Nation
MOE:	Ministry of Education
MSVI:	Moderate to Severe Visual Impairment
WBU:	World Blind Union
WHO:	World Health Organization

ABSTRACT

Braille skill training, as a vision rehabilitation function, could be designed and implemented to benefit different categories of target people among whom adults with visual impairment constitute a fundamental subject of interest. The existence of different targets and contexts for such a vision rehabilitation is expected to emerge with unique practices, challenges, and opportunities for the specific trainee's category. In this regard, a review of relevant literature by the researcher shows that there is a lacuna of empirical studies conducted on such relevant aspects. This thesis was, therefore, initiated with a general objective of exploring the practices, challenges and opportunities of braille skill training for adults with late visual impairment in Addis Hiwot rehabilitation center. A qualitative research approach, and specifically a descriptive case study method, was employed to explore the nature of issues of interest. A total of 5 participants were selected as key informants from both trainees (4) and a staff member (1) of the rehabilitation center using a judgment type of non-probability sampling method. Semi-structured interviews and observations were the fundamental tools used to generate the primary data, while secondary information was mainly captured through reviewing relevant documents. A thematic analysis was employed to analyse the data and reach at meaningful findings. Eventually, the findings of the study were categorized and presented under three themes vis-à-vis; practices, challenges, and opportunities. The practices were found to include orientation, teaching and learning, as well as conducting assessments; and challenges related to educational materials, physical environment, curriculum, personal wellbeing status, and socio-cultural and economic aspects were discovered. Opportunities, a third theme, also involved similar sub-themes with those established under challenges. Given these findings, therefore, the researcher finally made such recommendations as; conducting further research to explore peculiar experiences of adults with a partial visual impairment across different rehabilitation centers, providing orientation on a continuous and multidisciplinary base to enable similar targets be impacted positively and consistently, creating relevant social platforms in which learners can interact horizontally during planning & implementing the different Braille skill training practices, improving distribution of educational materials such as braille books and relevant reference materials among learners, and financing establishment or maintenance of relevant facilities required for Braille skill trainings.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Visual impairment has become one of the world's most serious health issues, affecting a huge portion of the global population. There were an estimated 253 million people worldwide who are visually impaired. Of this, 36 million were blind a further 217 million had moderate to severe visual impairment (MSVI). The prevalence of people that have distance visual impairment is 3.44%, of whom 0.49% are blind and 2.95% have MSVI. A further 1.1 billion people are estimated to have functional presbyopia. Though vision loss can afflict persons of any age, the majority of those who are blind or have vision impairment are over 50 (Ackland, Resnikof & Bournein, 2017). In this respect, almost 90% of the visual impairment people live in low - and middle-income countries (WHO, 2004 as cited in Kalra, Lauwers, Dewey, Stepleton, & Dias, 2008). This burden of prevalence in visual impairment has long been empirically explored to hold true in countries like Ethiopia. According to (Berhane, Worku, Bejiga, Adamu, Alemayehu, Bedri *et.al.*, 2008) for instance, the national visual impairment rate of Ethiopia had already reached 5.3 % of the total population. Only 6% of the totally blind people were in their childhood stages (Berhane *et.al.*, 2008) suggesting that the prevalence of similar disability was experienced at later ages of largest victims.

Large segments of people with visual impairment of the world are identified with lack of access to various support systems, such as education, which otherwise could enhance their participation in socio-economic and personal development processes. Yet, the important position of literacy for humanity in general and persons with some disability in particular was strongly established in various forms of institutional and policy frameworks. According to (WBU, 2003 cited in Mitiku, 2020) literacy is a human right. Besides, the Convention on the Rights of Persons with Disabilities (CRPD) states that persons with disability have the right to communicate in a variety of ways that includes braille skills (Nicoli & Ninio, 2007).

In spite of provisions of the frameworks, developing nations are not yet able to enforce proper and adequate implementation of the provisions so as to help people with disabilities get access to education. Evidences show that only less than 3% of persons with visual impairment are able to

get access to literacy in low-income countries (WHO, 2004 as cited in Kalra *et al.*,2008). In Ethiopia, an evaluation of adult education center was found to be not conducive and friendly to accommodate persons with disabilities. There seems to exist also a long way for the nation to particularly educate those with special education needs (MOE, 2012).

Though imparting Braille skills should serve as the major method of literacy for the person with visual impairment (Mccarthy, Rosenblum, Johnson, Dittel, & Kearns, 2016). learning Braille skills has often been constrained by different challenges in the developing world. Among the causative factors to such limitations include; lack of trained teachers and challenges associated with learning to write Braille on a traditional slate and stylus (Kalra *et al.*,2008). Besides, low-income countries have limited Braille-producing equipment, resulting in a scarcity of Braille materials and personal Braille-writing devices (Yibeltal, 2012).

Provision of Braille skill training is one of the various or compensatory mandates that frequently found at the heart of vision rehabilitation efforts. With an evidently continuing rise in the prevalence of adults with visual impairment particularly in the developing world and, therefore, the urge of efforts put in place to address corresponding needs (Martiniello, Haririsanati, & Wittich, 2020), vision rehabilitation institutions and their Braille literacy programs are expected to experience a set of emerging practices, and challenges as well as opportunities. As much as these prospects become unique, learning from them would also enable to inform proper policy formulation and successful implementations of adult vision rehabilitation. Thus, this study was proposed with an aim to assess the practices, challenges, and opportunities of Braille skill training intervention for adults with late visual impairment at a purposively selected rehabilitation institution i.e., Addis Hiwot Rehabilitation Center (AHRC) which is found in Addis Ababa, Ethiopia.

1.2. Statement of the Problem

Imparting Braille skills is one among the major vision rehabilitation interventions whose design might be aiming to address different types of visually impaired targets, and its implementation could rest within various contexts. Many people with visual impairment often perceive that their Braille skills provided to them such advantages as improving their competence, liberty, and equality (Schroeder, 1998 cited in Khochen, 2014; Fajdetic, 2006). Given that the braille skills

literacy interventions are efficiently and effectively designed and implemented, therefore, the impact could stretch to a position where it enables the visually impaired targets become successful in their personal development and integration or re-integration of themselves into their socio-economic development processes.

In spite of the multiple advantages of imparting Braille skills for persons with visual impairment, a number of studies have explored that the outcomes of Braille skill trainings could be either challenged with various factors or some attributes would be counted as opportunities. Goudiras, Papadopoulos & Koutsoklenis, 2009; Kimeto, 2010; Khochen, 2014; Njue, Aura & Komen, 2014; and Martiniello, *et.al.*, 2020 are some of the major scientific works carried out with objectives of investigating the factors that continued to affect Braille literacy interventions under different contexts.

Based on a study conducted in a Kenyan primary school for instance, Kimeto, 2010 revealed that the outcomes of learning English Braille skills by students with visual impairment was constrained by such factors as poor physical and social learning environment, teacher qualifications, insufficient educational resources, and financial constraints. Even in cases where students with visual impairment could possibly get access to Braille skill training materials, their vision impairment might pose hindrances on the efficiency and effectiveness of their learning compared to the possible extent of learning that could happen for students without visual impairment (Khochen, 2014). Yet, the findings of Kimeto, 2010; Khochen, 2014; Njue, Aura & Komen, 2014 were particularly drawn from the experiences of younger or school age targets. In a similar vein, Mitiku, 2020, carried out an investigation with group of visual impairment students of a school in Ethiopia. The result reflected that the challenges of Braille competencies included, among others, unorganized sittings and desks, and uncomfortable arm chairs in classrooms, as well as insufficient resources required for the learning to take place (Mitiku, 2020).

On contrary, other studies have identified the factors affecting Braille learning interventions in an adult category of visual impairment targets. In this respect, Martiniello, *et.al.*, 2020 classified the factors which would either enable or become barrier of specifically Braille skill adult trainees into three categories vis-à-vis personal, social, and institutional factors. The authors further

specified the personal factors into the level of motivation to learn Braille, psycho-social responses, prior learning experiences, and physical capacities; social factors into responses from family and friends, responses from the general public, and relationship with other Braille users; and institutional factors into the level of awareness and availability of resources, responses from rehabilitation systems, and learning contexts.

Though the later studies conducted by Martiniello, *et.al.*, 2020 and Goudiras, *et.al.*, 2009 emphasized on the factors affecting Braille literacy as experienced by adults with visual impairment in rehabilitation centers, both drew findings from the contexts of high-income countries. Despite the voluminous literature existing on challenges and opportunities of Braille literacy interventions, a critical review of documents reviewed by the researcher for the current study do culminate with implying that there is shortage of empirical findings relevant to inform policies and practices of Braille skills literacy for adults with late visual impairment in the developing regions in general, and the case of rehabilitation centers in Ethiopia in particular. Results of the literature review did also reveal that there is a lack of scientific investigations that show emerging practices of Braille skill training interventions. Hence, the current study was initiated with an aim to assess the practices, challenges and opportunities of Braille skill training for adults with late visual impairment in a rehabilitation center context of Ethiopia.

1.3. Research Questions

The study was proposed to address the following research questions:

1. What are the practices of Braille skill training for adults with late visual impairment in AHRC?
2. What are the Braille skill training challenges that hinder adults with late visual impairment in AHRC?
3. What are the Braille skill training opportunities provided for adults with late visual impairment in AHRC?

1.4. Objectives of the study

General objective: The general objective of the study was to explore the practices, challenges and opportunities of Braille skill training for adults with late visual impairment in AHRC.

Specific Objectives;

1. To understand the major practices of Braille skill training for adults with late visual impairment in AHRC.
2. To describe the main challenges that hinder the Braille skill training of the rehabilitation center on adults with late visual impairment.
3. To describe the major opportunities of Braille skill training in AHRC for adults with late visual impairment.

1.5. Scope of the Study

This study focuses on the braille skill training for adults with late visual impairment at AHRC. The researcher selects and conducted an in-depth study of subjects of interest in a single vision rehabilitation center (AHRC) context. AHRC was confirmed to be the only sole institutional establishment of the country to rehabilitate persons with late visual impairment, and hence it is selected purposively. AHRC was established in 1992 E.C. The center is located in Arada sub-city, woreda 6 of Addis Ababa City Administration.

1.6. Significance of the study

The study is believed to have a number of significances. Principally, it is expected that the findings of this study will give insight about the practices, challenges and opportunities of AHRC. By generating empirical evidences related to such practices, challenges and opportunities in rehabilitation context, the study is expected to inform policy makers to design policies and actions required to assist the people with visual impairment in general and the adults with late visual impairment in particular. The results could also serve as potential inputs for planning processes of various rehabilitation centers. It is also hoped that the findings of this study will be important addition to the existing knowledge and literature on this topic.

1.7. Definition of Key Terms

The following are definition of terms that was frequently used in the study:

Adult with late Visual impairment: In this study adults with late visual impairment are those individuals who are 30 years and above of age, and become visually impaired sometimes after they were born.

Braille skill training: In this study Braille skill training refers to training in Braille which includes writing and reading skills.

Practices: In this study, practice refers to regular performances or activities done before, during and after Braille skill training for adults with late visual impairment in AHRC.

Challenges: In this study, it refers to different circumstances that create barrier to Braille skill training for adults with late visual impairment in AHRC.

Opportunity: In this study, opportunities refer to many circumstances or conditions which are fortunate, lucky or favorable and can be put to use by Braille skill training for adults with late visual impairment in AHRC.

Rehabilitation center: In this study it refers to a place which provides rehabilitation service.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Voluminous body of literature have been identified and reviewed by the researcher to comprehend conceptual accounts on themes of interest vis-à-vis Practices, Challenges and Opportunity of Braille skill trainings for adults with visual impairment. Meanwhile, several studies that dealt with empirical realities concerning the major subjects of this thesis were critically analyzed and lessons were drawn from the results. Finally, the review grew into core discussions to reveal the relevance of issues under consideration and emerging knowledge gaps which need further investigations. This section, therefore, presents briefly the same.

2.1. Historical Background and concept of Braille

The braille code, invented by Louis Braille in the mid-1800s, has a fascinating history and is still as important in the lives of blind people today as it was when it was first invented. New technologies have increased access to information, but braille as a reading and writing system cannot be replaced. Braille allows for automated and independent access to reading materials. Braille reading and writing are used by blind and people with visual impairment in the same way as print is used by sighted people (D'Andrea, 2015).

Braille is a raised-dot device that helps blind people to read and write using their fingers (National federation of the blind, 2009). Additionally, (D'Andrea, 2015) braille is a raised-dot device centered on a “cell” of six dots arranged in a three-dot-high by two-dot-wide grid. Cells in the braille system represent letters, sentences, and sections of words, allowing blind or people with visual impairment to read text tactilely. For the blind, the Braille code is the most widely used way of reading and writing. It's the only device that lets blind people read and write independently, as well as communicate with each other Braille has been adapted for almost any written language due to its usefulness (National federation of the blind, 2009). The blind utilized the slate and stylus as an alternative to making notes with a pencil and paper. (Wormsley & D'Andrea, 1997 as cited in kimeto, 2010).

2.2. Braille Skill Training as Vision Rehabilitation

Braille skill training is one of the vision rehabilitations often conducted to enable or enhance the ability of visual impairment targets to read and write. Indeed, such an intervention is only one among the several therapeutic and rehabilitation strategies vis-à-vis Orientation and mobility, social interaction skills, independent living skills and personal management skills, recreation and leisure skills, assistive technology, visual efficiency skills (Atkin, Fenton, Holbrook, MacCuspie, Mamer, McConnell, *et al.*, 2003).

2.3. Practices of Braille Skill Training and related concerns

Orientation: The practice of orientation, in the context of vision rehabilitation, is a fundamental and prior activity substantiated by guidance and counseling of the visual impairment target person. The goals this support will range from advising the visual impairment persons on ways of getting at ease with difficulties experienced as a result of being visual impairment (Carney, Engbretson, Scammell& Sheppard, 2003) to equipping them with self-guidance and mobility skills (Yuwono, 2017). The latter, in particular, will often enhance persons with visual impairment interaction ability with their environment and undergo social adjustments in various rehabilitation institutions. Such advantages were also accompanied with a sense of motivation and confidence felt by, for instance, students at inclusive schools (Yuwono, 2017).

Preparing for Braille Skill Training: Preparing the visual impairment trainees, as a first stage among the practices of Braille literacy intervention, requires prior understanding of the different properties of their disability and the corresponding implications for skill acquisition. In this regard, the dynamics of being a visual impaired persons as they emerge with adaptive strategies for learning new things have long been assessed and became part of documented knowledges. Generally, persons with poor or no vision are marked by their tendency to perceive the world through their ears, fingers, skin, noses, mouths, and gestures. They also need longer time of duration to experience physical items compared to the sighted persons. Due to these and related reasons, therefore, people with visual impairment do not happen to recognize the world with similar concepts that their peers with visual abilities do (California Department of Education, 2006).

Hence, and in order for an effective kickstart of learning by people with visual impairments, there is a need to assist them in matching what they feel with what they hear, smell, and taste. The adults with visual impairment, in particular, require spending a one-on-one time with facilitators so that they will be able to learn labels of the various things found in the surrounding environment. Such an assistance could even become more demanding for many of the people with visual impairment in the adult category who frequently encounter an inability to use their hands for exploration or “tactual defensiveness”. The later happens for reasons that are so far unknown (California Department of Education, 2006).

Tactile preference and its impacts on learning: While examining whole hand and finger, readers who use two hands and read with their hands more independently read faster, obtain a reservation, other fingers in addition to the index fingers will gather information during the reading process, Light touch is preferable for tactile sensations, Observation (2 handed), Scrubbing entails circular or up-and-down movements should be identified to teach braille skill (Sitten, 2018).

The most productive motion is from left to right, Kinesthetic memory in relation to finger pads and monitoring, Recognition of the entire form (talk about which dots are missing), Discrimination on the basis of facts, spacing between lines, a space between letters, identifying a Braille cell, Scanning and understanding of whole words all of those should be consider during pre-Braille skill training (Sitten, 2018).

Factors affecting teaching persons with Visual Impairments: People with visual impairment do not have a good view of their surroundings. This hazy outlook on life will necessitate assistance in all areas. People with visual impairment can need direct instruction to learn new ideas or concepts they will also need to explore their other senses to complement what they experience by vision. People with visual impairment will have to understand that there's a world outside of themselves and their own requirements. Persons with visual impairment will also need to be trained and given the ability to interact with the world by learning to organize their actions in a number of environments (Truitt & Suvak, 2001).

An individual who has been blinded by accident (after birth) faces unique challenges. It is necessary to perform tests in order to determine whether or not Braille is needed. Furthermore,

extra caution must be exercised while teaching Braille. If the vision loss was recent, the individual may not have fully recognized the loss of vision and the need for Braille. Forcing someone to learn Braille before they are ready will cause them to have a negative reaction to it and refuse to learn it. Before the person is able to embrace Braille, he or she will need counseling. Before graduation, senior high school students may not be open to Braille instruction (Truitt & Suvak, 2001).

2.4. Consideration for Braille skill teaching

Psychological consideration: The person might be struggling with some of the emotional aspects of adapting to vision loss if they equate Braille with blindness and also fear stemming from presumptions about a lack of information regarding Braille. It may be beneficial by counseling to help them explore their feelings and discover the true reasons for their rejection of Braille, showing them how to use Braille in their daily lives, i.e., seek to understand how Braille may be useful to the user (identify needs) and providing peer tutoring from a person who is Braille literate (Sitten, 2018).

Consideration of physical ability: Motor skills for properly positioning the body and hands, Tactile skills sufficient to distinguish between different dot configurations and sufficient level of manual skills to read and write Braille (Sitten, 2018).

Consideration of cognitive ability: A sufficient level of literacy to meet needs (helpful to know how much they read before losing vision as well as use of formal testing), Ability to learn new things and follow instructions (sufficient short- and long-term memory) and take into account any other limitations that can impair your ability to learn. It is critical to provide instruction in the pre-Braille skills mentioned below until it has been established that the client has the confidence and capacity to learn Braille. Kinesthetic memory is developed in these areas, which is essential for tracking, placing the cell under the finger, locating the next line, and developing a soft touch. Furthermore, spatial perception within a cell, as well as between words and lines, is taught. Tactual discrimination skills can be improved without having to think about recalling individual letters, which is important for learning Braille (Sitten, 2018).

2.5. Challenges of Braille Skill Training

Learning to read and write is more difficult for a student learning Braille than it is for a student learning print. The use of touch in reading and writing is a rare feature of reading and writing for children who are blind (Kimeto, 2010). There are so many challenges of Braille skill training.

Challenges related to Educational Materials: While some countries' legislation (for example, the Equality Act 2010 in the United Kingdom) supports people with visual impairment having access to materials in their preferred format, the availability of Braille content is limited due to the additional cost of producing Braille books. This is a serious issue for both service providers and people with visual impairment, especially in developing countries where services for visual impairment people are scarce and equality legislation is almost non-existent. In the Middle East, for example, the use of Braille books is limited to school materials. As a result, Braille readers have very limited access to books in Braille that are not part of the school curriculum and that they may like to learn Braille production has also decreased as a result of the increasing movement toward electronic and audio materials (Khochen, 2014). The consistency of available Braille materials varies greatly. The availability of qualified transcribers varies as well. In our classrooms, there must be a dedication to “dot-perfect” Braille. Person with visual impairment deserve the same high-quality products as person who can read (California Department of Education, 2006). Provision of materials and equipment, as well as financial resources, are among the challenges in implementing integrated education. When a school is well-stocked with fundamental teaching and learning materials, the teacher's work becomes easier, and all students' learning outcomes increase. Students with Visual impairment require resources such as Braille paper, slates, and stylus, as well as Brail library service, Braille books, tape recorder, audio cassettes, and audio books to meet their special educational needs (Alemu &Zergaw, 2018).

Despite the fact that much of the available assistive technology makes Braille easier to use, some people mistakenly assume that talking machines and audiotape will replace Braille. However, auditory access to knowledge does not take the place of print or Braille. It is a complement to these important literacy resources. It's also worth noting that, while Braille translation software is a fantastic tool, it's not enough to ensure accurate Braille development. The use of such tools necessitates knowledge of the Braille language (California Department of Education, 2006).

Challenges related to Physical Environment: States parties must guarantee that communications and information services, transit networks, buildings, and other structures are designed and constructed in such a way that people with disabilities may use, enter, and reach them (UN General Assembly, 2007). The learning environment should be designed in such a way that students can readily adjust to new situations and improve their learning. In order to support learning, learning materials should be readily available and well-organized. When the learning environment is not conducive to the pupils' learning, their learning will be immediately disrupted. It should include technology and assistive equipment, whose use will aid students in their educational pursuits. As a result, all stakeholders in education must consider reforming the educational system to help these pupils learn more effectively (Kapur, 2018). According to a survey conducted in Pakistani elementary school teachers in 2013 and cited in (Debele, 2015), the school physical environment, which includes the school building and surroundings, classroom, furniture, layout, noise, temperature, lighting, and so on, has a significant educational impact.

Challenges related to Curriculum: Another distinction in learning to read and write Braille and print that influences the creation of instructional programs is that Braille readers must learn more symbols than print readers, and they do not learn all of the elements of the code until much later than print readers. However, once they hit a third-grade reading standard, the vocabulary of people reading materials will not include any of the Braille contractions. Providing resources at a first, second, or third grade reading level, on the other hand, does not guarantee that the person can understand or perceive the Braille symbols that do appear. Apart from the symbols, Braille readers must learn Braille symbol use codes, which print readers, do not have to deal with. This suggests that Braille readers have a longer period of time to master their reading medium, while their sighted counterparts have progressed beyond learning their code. For person learning to read Braille, the existence or absence of incidental learning is extremely important (Dogbe, 2020). Everything being equal, introducing contractions early in a student's reading process is linked to better literacy achievement later in the student's literacy career.

Challenges related to Personal Well Being Status: It's important to examine the student's age and whether they have other literacy alternatives. The student's intellectual ability will determine whether functional braille or traditional braille should be the focus. Learning to read Braille

requires a student's tactile and perceptual abilities and skills. Students who have had strokes may not have the sensitivity in their fingers to distinguish minute variations in braille characters. The student's age and any additional difficulties will also play a significant role in selecting how to teach braille to the pupil (Willings, 2017).

People get visual impairment at various points in their lives. As a result, they may be required to learn basic Braille literacy at any age and in any grade level, posing additional challenges for both students and teachers (California Department of Education, 2006). Similarly, the student's capacity to acquire skills and concepts is influenced by his or her age and degree of development prior to the onset of the visual impairment. Students with congenital blindness may struggle to grasp concepts, whereas students with adventitious blindness may have enough visual memory to benefit from visual descriptions (Carney *et al.*, 2003).

People learning to read Braille faces a challenge with tactual acuity, which leads to slower reading times than most print readers. However, many people with visual impairment people can solve this problem with practice and experience. It may take longer for those with insensitive tips, and others will never learn the requisite tactual acuity to read Braille effectively (Khochen, 2014).

When blindness strikes, it can be difficult to carry out a variety of everyday activities. The beginning of Braille training can be a stressful experience. Helping the student re-master a previously used skill such as a household task might be a good place to start. Since an adventitiously blind person can carry preconceived positive or negative attitudes about blind people to the learning situation. The following will be considered before Braille instruction begins: encourage the individual to express his or her feelings about Braille as a sign of blindness, the teacher and the student will look into the origins and validity of common myths about Braille use, the student will be telling that Braille does not isolate blind people in and of itself and it will be made clear that learning Braille does not necessitate the "sixth sense" that is frequently attributed to the blind (Sitten, 2018).

Challenges related to Social-Cultural and Economic Conditions: Some professionals, parents, and person with visual impairment assume that Braille is a second-class medium that cannot offer the same level of accessibility as print. These pessimistic and inaccurate viewpoints can

lead to the adoption of less efficient reading media and devices (California Department of Education, 2006). People who oppose being educated in a different medium than their peers can develop negative attitudes toward learning Braille. Adults who struggled to learn print reading before moving on to learning Braille or those who have lost their sight later in life can have negative attitudes toward Braille. Their dissatisfaction may be exacerbated by the fact that they must "start again," but this time in a format in which they are unfamiliar. For some, learning Braille is a "profoundly emotional problem" that generates animosity toward it and its supporters because it represents the final acknowledgment or realization of going blind (Rogers, 2007 as cited in Khochen, 2014).

Teachers of visual impaired need regular in-service training in order to improve and refresh their university preparation activities. One of the special pleasures of this career is the ability to teach Braille. Teachers need assistance, preparation, and time in order to provide these essential services (California Department of Education, 2006).

Teachers are the most important factor in determining a child's educational quality. The academic qualification, professional training, commitment, and dedication of teachers have a significant impact on the quality of education and training provided. Because teaching is a highly skilled profession that necessitates specialized training not only in subject knowledge, but also in teaching skills such as identifying strengths, weaknesses, and interests, as well as responding to a variety of learning needs, classroom management, positive discipline, and attitudes (Alemu & Zergaw, 2018).

2.6. Opportunities of Braille Skill training for Persons with Visual Impairment

Beginning Braille readers are taught in a variety of ways, but one thing they all have in common is that they need to be able to utilize Braille and increase their knowledge of Braille contractions (Mccarthy et al., 2016). The systematic procedures of gathering and identifying the needs of the learners are referred to as assessment of the learner's needs. When the needs, backgrounds, and prior knowledge of the learners are known, quality teaching can take place in an effective manner. Prior to the start of the study program, it is critical for both students and teachers to assess the learning needs of students with visual impairment. It allows for a better understanding of the student's academic abilities, approaches, strategies, and learning styles (Kapur, 2018).

Convenience of Braille for Learning by Person with Visual Impairment: Braille is the most evident reading medium for person with visual impairment, and it is an important part of every educational program for person with visual impairment. Braille is a tactile reading and writing device developed for blind people, and it is the most common way for them to become literate (California Department of Education, 2006). For persons with visual impairment, Braille has various advantages over other writing systems. First, it can represent alphabet letters, accented letters, punctuation, digits, and even musical notes because it is versatile. Second, the fewer keys necessary to enter a chord enables for a direct finger-key match, reducing the need for visual/tactile scanning (Guerreiro, Gonçalves, Marques, Guerreiro, Nicolau, & Montague, 2013).

Braille has been recognized as a powerful and vital tool for literacy for people with visual impairment, particularly in the course of education. Braille helps people with visual impairment in visualizing text by allowing them to experience and word, learn how these words are written, and most importantly, it allows people with visual impairment access to content on an equal footing with their peers, influencing their educational achievement and providing a forum for them to compete with others. Many people with visual impairment associate their Braille skills with their competence, liberty, and equality (Schroeder, 1998 cited in Khochen, 2014). Braille has helped people with visual impaired have equal opportunities in everyday life (both professional and personal) by allowing them to practice written communication (reading and writing) (Fajdetić, 2006).

Psychological/Emotional Upliftment (opportunity): Braille has a negative connotation for some people with visual impairment. Learning Braille may lead to a person accepting the label of blindness and confronting some of the negative stereotypes about blindness and Braille. Once a person has mastered Braille and it has become an integral part of his or her daily life, the individual's attitude toward Braille can take on a new connotation: one of them is competence. People with vision loss can identify themselves as blind by studying Braille, which can help them improve their self-esteem and gain new confidence in their talents. The ability to comprehend Braille has been linked to increased self-esteem, independence, and competence (Schroeder, 1996).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

This study was initiated with intentions of investigating the practices, challenges, and opportunities present to adults with late visual impairment who attend Braille skill training programs in a context of a vision rehabilitation center. A qualitative research approach was used so that acquiring in-depth account of the nature of subjects and phenomena investigated become feasible. Besides, a descriptive case study research design was found appropriate, and hence employed as there was a need to make thick description of the phenomena of interest as it happens in a real context of a specific vision rehabilitation center. Application of the descriptive case study should be considered when the focus of the study is to qualitatively assess the happening of a phenomenon without intending to manipulate the behaviors of those who involve in the study (George and Bennett, 2005; Yin, 2003), and the descriptive case study method is meant to describe the intervention or phenomenon and the real-life context in which it occurred (Yin, 2003). At least two data collection strategies were used so that obtaining in-depth information and triangulation of the same could become possible. The methods majorly consisted of semi-structured interviews and observation. Finally, the data were organized and analyzed using a thematic analysis method since this method was found appropriate to analyses the different categories of qualitative information.

3.2. Description of the Study Area

The research was carried out at AHRC which is found in Addis Ababa – the capital of Ethiopia. The center is located in Arada sub-city, woreda 6 of Addis Ababa City Administration. AHRC is a legally registered Ethiopian resident charitable organization that was established in May 1992 EC with the primary purpose of rehabilitating people with late visual impairment. The rehabilitation service is particularly provided with a prior emphasis to adults and people who are visually impaired in their late stages. Among the major rehabilitation services delivered by the center are; psychological support and counseling, orientation and mobility training, basic Braille literacy training, ICT training and tutorial services, independent living skill training, Braille

embossing and printing service, audio-Braille library service and also vocational and business management training etc.

3.3. Population

The target population of the study comprises all adult with visual impairment trainees of Braille skill training program at AHRC and staff members of the center. Accordingly, the total population size of the study was nineteen (19) i.e., sixteen (16) trainees and three (3) staff members of the center. Both trainees and staff have been identified with different sex and age categories as well. Accordingly, there are 16 trainees (10 male and 6 female), and 3 staff members (1 male trainer, 1 female trainer, and 1 center manager) for the braille skill training program. The population is comprised of those persons who are found in their 30s to those who are in their 50s. Besides, the age at which members of the population experienced visual impairment for first time was found to fall within the range of 20 to 45 years.

3.4. Participants

A convenient non-probability sampling method was used to select the AHRC which is treated as a case in this study. AHRC is located in a convenient place in terms of proximity to the researcher's residential area, and hence making a frequent visit for data collection and related activities became easier for the researcher. With regard to the key informants, a judgment type of non-probability sampling technique was employed to select participants from different categories of sexes, ages, status in the rehabilitation center (participant type), and diversity in age of onset of visual impairment.

In order to do so, the researcher initially approached the administration of AHRC and requested a list of the adults with visual impairment who were attending Braille skill training program, and that of staff members of the center. The document obtained from the administration included such entries as name, sex, and age of the Braille skill training attendees of the center. Having paid a look at the list of the target population and their categorical descriptions, therefore, the researcher used a judgment type of non-probability sampling technique to select respondents with different demography and personal backgrounds so as to enable obtaining information derived from multiple experiences. Judgment was made specifically to find at least one key

informant from different sexes, ages, participant’s type (i.e., trainee or staff), and age at onset of vision impairment (i.e., earlier or later age).

Accordingly, a total of five (5) individuals comprised of four (4) trainees and one (1) staff member were selected as participants of the study. The participant trainees are composed of equal proportion of sex, and age categories while a male trainer key informant was selected from the staff since, during securing a consent for the study, the participant (compared to rest of the staff) was confirmed to have better communication ability and accessibility during data collection time. The age category at which respondents became visually impaired for first time was also represented by selecting participants who encountered visual impairment in their 20s, 30s, and 40s of age. Background of participants was summarized in the following table.

Table 1: Background of participants by different criteria

SN	Participant Type	Sex	Age of respondent	Age at onset of vision impairment
1	Trainee	Male	31	24
2	Trainee	Male	57	43
3	Trainee	Female	30	22
4	Trainee	Female	52	41
5	Trainer	Male	56	30

Source: A personal review of document obtained from AHRC

3.5. Data Collection Instruments

Two types of instruments were used to collect data from the key informants and various relevant phenomena of interest. These methods were observations and semi-structured interviews. Information generated through the different methods were also triangulated for corresponding issues and, therefore, helped in confirming emergent findings. The success in conducting observations and interviews, in particular, were actually attributable to the modest facilitation by trainers and center manager of AHRC.

Observations: Different types of observations (both participant and non-participant) were undertaken in and around AHRC for a total of 6 hours (for a set of 2 consecutive hours of 3 different days of field work). Majority of the physical environment related challenges (in or

around the classes), for instance, were able to be observed by the researcher. A participant observation method was employed to grasp information on the discomfort that could be felt by the trainees due to the narrowness of class rooms and poor arrangement of furniture as well as the difficulty in using walkways inside or near the rehabilitation center. On contrary, an indirect (non-participant) observation was conducted and provided the researcher with an insight on the diversity and quantity of educational resources existing in the center which was a phenomenon treated as both challenge and opportunity. Besides, challenges related to the physical wellbeing of trainees were able to be at least partly witnessed by the researcher using an indirect observation. In order to do so, a checklist was prepared inculcating statements of inquiries on issues that could possibly be addressed through observation.

Semi-structured interviews: Semi-structured interview is one of the data collection instruments employed in this study in general, and it was particularly used in finding the primary information from participants. Besides, the method was relevant to get information on nearly every subject and phenomena of interest to the study. An interview schedule was prepared containing multiple and open-ended questions so as to enable guiding the survey work with flexibility and hence, obtaining in-depth information related to the practices of Braille skill trainings conducted in AHRC and the challenges as well as opportunities experienced by the adult trainees with late visual impairment. Except part of the data collected on challenges and opportunities related to physical environment, personal well-being, and educational materials (which were obtained through observations), information on majority of the themes of interest were generally obtained through the semi-structured interviews.

3.6. Data collection procedure

The data collection activity had normally begun during the onset of reviewing documents (both published and unpublished from online or off line sources) and reflecting on the major topics of interest. Accordingly, an extensive volume of information on either conceptual or empirical accounts of vision rehabilitation, their global and local aspects, as well as the practices, challenges, and opportunities for adults with late visual impairment in Braille skill learning contexts were collected, organized, and analyzed. Learning from the same, meanwhile, it was possible for the researcher to develop different data collection tools utilized during the qualitative survey. These tools were the semi-structured interview schedules and checklists for

observations. Then, the survey activity started after approaching AHRC administration and getting consent. The center also played important roles in facilitation of data collection through assisting the researcher find necessary resources and key informants.

The qualitative survey generally began with conducting observations of physical situations in the center, and personal conditions related to the trainees. While doing so, the researcher employed an observation checklist and used to jot down important notes of the observations. Such type of data collection strategy had continued parallel to conducting interviews with key informants as well. For this in-depth data collection method, an interview guide was written in English and then translated into Amharic (the local language) prior to starting the activity.

3.7. Data Types and Sources

Both primary and secondary data were collected and employed for the current study. The primary data included the specific accounts of categories of practices, challenges, and opportunities experienced by adults with visual impairment participants of the Braille skill training program organized by AHRC. They are principally obtained from the participant adult trainees and staff members of AHRC. Majority of the data on practices were articulated by the staff members, while the substantial quantity and impacts of challenges were expressed by the key informant adult trainees. With regard to the opportunities, in fact both trainees and staff members were able to identify and reflect up on different dimensions, and hence, both categories played critical roles.

The secondary data included relevant theoretical and empirical aspects of the themes investigated. This information was used in understanding the major concepts, experiences, and backgrounds to the topics such as Braille skill training, vision rehabilitation interventions, categories of targets for the interventions, visual impairment, and their corresponding challenges, and opportunities. The secondary data were also inputs used in describing the background of participants and the studied case i.e., AHRC. They are majorly obtained from documents such as published research articles (most of which were accessed through such online search engines as Google scholar), official or technical reports containing prior accounts of descriptions of the subjects or topics studied.

3.8. Method of Data Analysis

After data collection was completed, the responses were translated back into English for analysis and report writing purposes. A proper review and processing of data were also conducted before analysis. Besides, the researcher had to read, and comprehend each of the data obtained from the different sources prior to beginning analysis. This process has directly helped in organizing the information, and focus on relevant subjects during analysis. Since majority of the data were qualitative in nature, then, a corresponding and appropriate qualitative approach was employed to analyse them. Accordingly, a thematic analysis was carried out to reach at proper and meaningful findings. The specific procedure of data analysis also included detecting, coding, categorizing, and providing patterns or the relevant themes and sub-themes across a dataset.

3.9. Ethical Considerations

Anonymity and confidentiality with regard to identity of key informant respondents and other individual sources of information were assured. Besides, the purpose of the study was explained to the respondents by the researcher and obtained a consent from each ahead of beginning interaction with them.

CHAPTER FOUR

FINDINGS

4.1. Introduction

This section of the thesis report presents findings on the major themes of interests vis-à-vis practices, challenges, and opportunities of Braille skill training program at AHRC as either experienced or perceived by the key informants. Different response categories and sub-themes were addressed under each of the major themes of the study. Meanwhile, relevant direct quotes and their implications were also organized and used to help in emphasizing as well as elaboration of typical phenomena.

4.2. Practices of Braille Skill Training at AHRC

The Braille skill training sessions for adults with late visual impairment at AHRC involves various practices some of which are similar and others unique to the activities carried out in conventional trainings or teaching and learning classes. Based on the information obtained from participants of the study, there are three major practices of Braille skill training program at AHRC. These practices are Orientations, Teaching and Learning, as well as Assessments.

Orientation is a relatively unique practice and encompasses such sub-activities as guidance and counseling for enhanced emotional readiness and safe mobility in the rehabilitation center. Though the other two practices (teaching and learning and assessment) appeared similar with other common types of teaching or training practices, their sub-activities were identified as unique. Teaching and learning practice involves such contents as tactual skills and braille reading and writing skills development, while assessment encompasses conducting continuous assessments and a final evaluation of trainees' performance for each subject. In fact, the uniqueness of these practices was also seen in the condition where both begin with developing the ability of trainees to efficiently respond to braille learning and evaluate the outcome of learning using the same ability at the end. Details of each practice are presented in the consequent sub-section.

Table 2: Practices of Braille Skill Training at AHRC, their Contents, and Practitioners

SN	Activities	Contents of the training activities	Practitioners
1.	Orientation	1.1.Guidance and counseling	Center Manager, Guest Psychologists, Center Trainers, and Trainees
2.	Teaching and Learning	2.1. Tactual skills (Hands on Braille)	Center Trainers and Trainees
		2.2. Braille reading and writing skills	Center Trainers and Trainees
3.	Assessment	3.1. Continuous Assessment	Center Trainers and Trainees
		3.2. Final Evaluation	Center Trainers and Trainees

Source: Own in depth interview data, 2021

Orientation: According to key informants, an orientation session is where learners and staff members of the rehabilitation center begin to interact with each other as part of the Braille skill training process. During orientation, the center manager - often accompanied by an invited guest psychologist and Braille trainers, will provide guidance and counseling for adult trainees with late visual impairment who newly join the Braille skill training program. During the in-depth interviews conducted for this study, participants reflected that the guidance and counseling session is relevant to trainees in one way or another. According to the trainer key informant, for instance, late visual impairment as compared to impairments encountered in earlier stages of life or during birth tend to severely disorient adults and, eventually, the affected adults often hardly become confident to receive any technical aid in general and Braille skills training in particular. The notion obtained from the trainer participant is quoted as follows;

“..... up on arrival of new students in this rehabilitation center, we usually start our classes by providing them with counseling and guidance assistance since our experiences tell that the adults who lost visual abilities in their later ages will often suffer from lose of ‘self-worth’ and courage. There is a tendency for such a category of victims to frequently think, worry, and complain about the lose than getting ready to learn new things.....” (Trainer, Key Informant).

Hence, the trainer submits that, the orientation session in general and the guidance and counseling sessions in particular are designed and implemented to address the problem by providing orientation for new trainees and encourage them to readily begin engaging in the training sessions. A similar idea was also found held by the key informant trainees. The quotes stated below refer to ones among the critical affirmations that the adult trainees make out of the orientation sessions;

“.....these stages where the adults with visual impairment are critically reminded of the fact that everybody will become visually impaired one day - soon or later... alone will help us drastically reduce the fear of being judged and sense of being down played by others due to being visually impaired...” (Male, Trainee, Key Informant).

“.....in the orientation session, we are provided with a set of convincing reasons to help us better understand and optimally regulate our feelings emerging from our visual impairment....., and yes, being blind is not among the alternatives listed for our voluntary choice, but accepting it subjects to our voluntary choice, thus we need to do so....” (Female, Trainee, Key Informant).

Being supportive of the above, experiences of the trainer key informant also dictate that the orientation practice often involves getting the trainees familiar with walkways found in the center for their safe mobility as well as discussing details of possible and positive impacts of trainees' engagement in the training programs. Besides, the participant indicated that the sessions would serve as platforms where trainers can empathize with trainees, and where intimate experiences can be shared between the trainees and the trainers.

Teaching and Learning: This practice begins with engaging trainees in hands on exercises where they are encouraged and guided to put their hands on such materials as Braille boards and books so that they will be able to identify, and familiarize with, the Braille skill teaching aids. This stage is, therefore, entirely meant for developing a *'Tactual skill'*. During this time, the trainer reflects that, the trainees are specifically expected to identify between shapes of Braille letters and numbers. The next remark also shows the functioning of developing a tactual ability of trainees;

“...learners will be provided with ample time and support to repeatedly carryout this exercise and ultimately develop a tactual ability. The carefully developed tactual ability will encourage and enable learners smoothly pass to the consequent reading and writing skills training activities...” (Trainer, Key Informant).

The responses obtained on inquiries about similar functions from trainees have also provided specific justifications for associations of enhanced tactual skill of trainees and improved readiness for braille reading and writing. All participant trainees were found to agree with the contribution of tactual abilities to an ease in their Braille reading and writing activities. An additional advantage of getting prior exposure and familiarity with sense of touch was also described by an older adult trainee as follows;

“...the exercise meant for improving sense of touch has even greater importance for those of us who are identified with poor sense of touch...” (Male, Trainee, Key Informant).

After the trainees develop a sufficient level of tactual abilities, they will be guided to start identifying Braille texts and reading them repeatedly. Key informants indicated that the reading exercises are performed using Braille boards and different Braille books. Based on the trainer key informant, the center is even equipped with a digital Braille skill reading reference aids installed at its library facility. However, the respondent adds that, the library is not fully functional as it has been under repairment since long.

Parallel to the Braille reading exercises, trainees will be also assisted to engage in Braille writing activities. A participant trainee mentioned that they do exercise writing using slate, stylus and Braille papers. All teaching and learning exercises usually begin with Amharic Braille tools and then shift to English ones. In this regard, a female trainee believes that the use of alternative tools and languages is relevant and makes the training interesting to adults.

Assessment: Key informants identified assessment as one of the major practices carried out during Braille skill training programs. The assessment practice is substantiated by continuous assessments and a final evaluation of learners’ knowledge and skill about Braille. According to

the participant trainer's response, the continuous assessment principally involves conducting different tests each of which is often conducted up on completion of a chapter of Braille books. The trainer also indicated that the trainees would be allowed to sit for a final exam only when they are able to successfully pass all tests. It was also indicated that the trainees wouldn't be allowed to sit for the final exam if they miss more than 3 points in each test. This pass point is also applicable to the final exam, where trainees would be permitted to start a new Braille book only if they are able to score the total results minus a maximum of 3 points from the total marks allocated for a final exam of the previous immediate book.

By doing so, the key informant trainer reflects, that the contemporary status of learners' knowledge and skills will be identified, the gaps in performances will be determined, and adjustment plans will be designed and lent to corresponding actions. Some of the adjustments and actions taken to address the gaps in learners' knowledge and skills - as reflected by the trainer, are;

“...capitalizing on modification or alternating mode of content delivery: repeating lessons, alternating speed of delivery, selecting and prioritizing topics, and reshuffling physical settings of class room facilities as deemed convenient by trainees...” (Trainer, Key Informant).

Pertaining to the assessment practice, key informant trainees have also shown a categorization and implementation of the specific activities consistent with the response of the key informant trainer. Yet, a participant trainee has characterized the assessments as something which provide double advantages to the learners. A paraphrased idea obtained from the key informant trainee is briefly presented below to show these advantages;

“...if a trainee is able to perform well in the assessments, the resulting success and promotion to the next stage of the training provides him or her tip of confidence. If a trainee fails to perform well in an assessment, on contrary, he or she will have a privilege to repeat lessons and this should be considered as advantage for the trainee again...” (Male, Trainee, Key Informant).

4.3. Challenges of Braille Skill Training

Results related to challenges of Braille skill training in this thesis section are organized and presented under five thematic categories vis-à-vis those which relate to Educational Materials, Physical Environment, Curriculum, Personal wellbeing status of trainees, as well as Socio - Cultural and Economic issues. Accordingly, key informants' responses on whether a major or specific component of each theme was forwarded as a challenge or not, and explanations provided along each challenge were elaborated.

Challenges related to Educational Materials: Challenges in educational materials were seen in terms of the key informants' perception of shortages or absence of the teaching, learning, or reference materials needed for Braille skill trainings in the rehabilitation center. In this respect, the trainer indicated that the center often experiences shortage in major educational materials. The respondent perceives existence of lacunae in major training materials such as Braille books, and Braille boards. The trainer makes an emphasis on inadequacy of Braille Books with the following paraphrased idea;

“.... lack of access to, specifically, Braille books has even become more problematic to the training programs these days as the cost of importing such materials keeps increasing and already went beyond the financial capabilities of the center. It is only because of the limited number of trainees that attend each class at a time that it becomes possible to continue training with such limitations...” (Trainer, Key Informant).

On contrary and interestingly though, the trainees have not agreed with the existence of shortages of the training materials. Key informant trainee participants of the study have demonstrated a level of confidence in the adequacy of the teaching and learning materials available to them. Yet, a reflection from one trainee might imply some degree of difficulty experienced by students to judge adequacy of training materials. His saying was;

“....as I'm a trainee, and hence, I may not be sure about the availability of adequate Braille learning aids, I cannot also tell that they are not adequate. In fact, I better say there are adequate materials....” (Female, Trainee, Key

Informant).

A little unique to that, another key informant trainee has revealed a reservation on the level of accessibility of reference materials relevant for Braille skill trainings. Indeed, a persistence of shortage in both diversity and quantity of reference materials was already given emphases in the responses obtained from the trainer participant.

Challenges related to Physical Environment: Braille skill training challenges imposed by the physical environment are mainly categorized into three; vis-à-vis those which relate to training classrooms' physical quality, the classrooms' internal setups, and center's physical settings outside the classrooms. Training classrooms' physical status, both internally and externally, was one among the conditions that key informants considered as poorest and largely challenging to the Braille skill training activity. Participants of the study have commonly reflected that the size of classrooms is very small and short roofed. In fact, the researcher was able to observe that the classrooms are not wide enough to properly accommodate the furniture and facilities put inside them. They appeared over crowded with the furniture and facilities. A trainee key informant whose height, according to the researcher's personal observation and judgement, could lie even within an average range of men's height emphasizes such a challenge with the following idea;

".... I'm usually facing difficulty to walk through the room standing straight. I've to bend a bit down during every mobility I make in the class room..." (Male, Trainee, Key Informant).

Similarly, the inadequacies and poor qualities of internal facilities such as chairs and tables were submitted as challenge by nearly every key informant trainee. A participant trainee ascertains persistence of the same challenge by forwarding;

".... since I joined this center, I've never found myself comfortably sitting in the chairs...There are a lot of occasions when I catch myself thinking about the possible risks of sitting on the poor chairs than concentrating on the lessons being delivered in the class..." (Female, Trainee, Key Informant).

This coupled with the narrowness of classrooms have often hindered participants' convenience during mobility and their stay in the classrooms. The following is a direct translation of response obtained from another key informant;

"...oh, our classrooms do simply look like animal barns or sheds. We usually feel a sort of discomfort from their extreme narrowness while sitting for training. Standing up and traveling either in to or out of class is also challenging. There are frequent moments when some of us are knocked our heads by the ceilings or crash into some facilities on our way into the classrooms" (Male, Trainee, Key Informant).

Participants indicated that they are somehow less challenged by physical conditions found outside the classrooms. Only one challenge i.e., a shortage of roads inside the center's compound having a standard quality and convenience for mobility of the adults with visual impairment was raised. Besides, trainees reflected that the impact of this challenge has somehow reduced due to the mobility related orientation provided to them prior to starting the training.

Challenges related to Curriculum: Curriculum related issues were among the important Braille skill training challenges indicated by respondents. In this regard, trainees emphasized on the difficulty of some contents of the training. The difficulty of learning Braille contractions, specifically for English Braille skills was indicated as most challenging. The quotes stated below are meant to reveal experiences of two trainees in relation to difficulty in learning contractions;

"...Braille contractions are very difficult to grasp. After frequently failing to be able to fully memorize such contractions, specifically the English ones, I was even thinking of quitting training. The complexity and volume of English Braille Contractions caused a serious fatigue on me". (Female, Trainee, Key Informant)

The second key informant also presents the same challenge by justifying that the quantity of contractions expected to be learnt and touching as a sense of acquiring the lesson challenging. The following is a brief quotation taken from the respondent;

"...The bulk of Braille contractions, i.e.,185 for English, is very difficult to deal with. Trying to memorize each of these contractions simply with a sense of touch

is usually problematic for us.” (Male, Trainee, Key Informant)

In addition to the above challenge, shortage of time to obtain adequate braille skills through the training was submitted by different categories of participants as a factor imposing a challenge on achieving objectives of the teaching and learning of Braille skills. The time allocated to complete the whole Braille skills training is one year and, according to a view of one trainee key informant, this could be sufficient to cover Amharic Braille skills only. Words of elaboration on related issue from another key informant about is also narrated as follows;

“... Acquiring skills in short training seasons is naturally difficult for adults. In this sense, the one-year time of graduating from the Braille skill training program seems not enough. Besides, trainees’ class attendance is often constrained by their demand to attend to either personal or social affairs. In this sense, acquiring Braille skills in such limited time becomes is even more difficult for the adults with late visual impairment. This difficulty would often lead many adults to fail and repeat sessions, requiring them an additional class attendance time.” (Trainer, Key Informant)

Challenges related to Personal Well Being Status: In this study, key informants were found to link some of the challenges of Braille skill training with trainees’ status of personal wellbeing. These challenges are conceptually specified into physical and emotional in nature. Pertaining to the physical challenges, a poor sense of touch experienced by specifically older trainees due to, among other perceived reasons, a deterioration in the functioning of their sense of touch in one way or another was a major concern. For instance, a relatively elder trainee key informant reflects the following;

“...my fingertips tips are increasingly experiencing dryness and that, I believe, is hindering me from properly feeling the shapes of Braille letters. The dryness is gradually increasing, and hence, I suspect that is related to age related health issue. I don’t know...” (Male, Trainee, Key Informant).

Yet, the trainer key informant has also reflected that the difficulty in developing tactual ability for Braille skills might be encountering even the younger trainees for a while since they have to initially deal with a shift of sensory organs for learning from visual to touching. Consequently,

the trainer adds that those learners who are less successful with making such shifts will gradually fail to remain focused and remember lessons – *‘begging for a need to repeat the exercises and the possible consequent fatigue experienced by trainees.’*

A gap in emotional wellbeing of trainees was the other phenomenon that respondents commonly viewed as an important challenge to Braille skill trainings. Almost all learners reflected that they felt a huge gap in their emotional readiness to attend Braille skill trainings up until they got a guidance and counseling support after joining the rehabilitation center.

Nevertheless, a perceived negative consequence of being identified with visual impairment on trainees’ emotional readiness to learn and, hence, the adverse effects on the training processes was revealed by the learners. The following quotes could stand for expressing trainees’ feelings about such perceptions.

“At this age of mine, I would have never thought of attending any class to learn, graduate, and seek for jobs if it was not for my visual impairment. I know I’m not able to do much of the things I could do when I was visually normal. Yet, I just decided to attend this Braille skill training program simply because it doesn’t hurt me to learn. I don’t learn to be a Judge or a Teacher.”(Female, Trainee, Key Informant)

“Sometimes, I get depressed when I think about where I would be right now if I had vision. Other times, I compare myself with my friends and get depressed again, because I feel I would have been in a better position if it was not for becoming visually impaired. See here and now, I have to learn to read and write again, and that using skin. So, I am not happy while I am learning - feelings I suppose, often get in the way of my learning process...”(Male, Trainee, Key Informant)

Challenges related to Social-Cultural and Economic Conditions: Socio-cultural and economic challenges are roughly the least perceived concerns of participants of the study. In relation to a socio-cultural obstacle, for instance, the participants revealed that there are some trainees who joined the training program coming from distant places and living with their relatives who are residents of Addis Ababa. They also get supports from these relatives. Hence, the participant

trainer reflected, attending their Braille skill training classes could often depend on the level of support they get from their relatives.

In this regard, the need to frequently deal with relatives who provided a room to reside in during the Braille skill training was indicated as a huge concern for one of the trainees. The respondent is already well convinced that these conditions would create a level of hinderance to a trainee to attend Braille skill training sessions at AHRC admitting his own experiences as follows;

“... during attending this Braille skill training at AHRC, I’m staying in Addis Ababa within the household of my sister’s family. Here, I have to deal with accommodating between economic implications of depending on relatives and corresponding cultural issues. Sometimes, I decide not to come to the training sessions just because I want to reduce the financial costs - the amount I often receive from them to pay for transportation and meal, that may cause burden on my relatives...” (Male, Trainee, Key Informant)

The other challenging economic factor in Braille skill training programs was reflected by the key informant trainer. According to him, the costs of many of the teaching and learning materials relevant for Braille skills trainings have gradually become unaffordable, and hence, the center is reaching exhaustion to make such materials accessible to every trainee.

4.4. Opportunities for Braille Skill Training

There are three themes which were explored to show opportunities for Braille skill training in this thesis. These are opportunities related to Educational Materials, Physical Environment, and Curriculum. The results are presented in the following section.

Opportunities related to Educational Materials: One of the major opportunities recognized by trainees is the availability of diverse teaching and learning materials. Indeed, the trainer also admitted that there is a substantial diversity of teaching aids available at the center though, for him, some materials are scanty in terms of allocating them for the whole number of students. Besides, participants have commonly considered the condition where the Braille skill training is provided in two languages, vis-à-vis Amharic and English, an important opportunity. This,

according to a trainee, opens the way for them to experience and acquire skills on further diversity of educational aids.

Opportunities related to Physical Environment: Respondents identified location of the rehabilitation center as an, and yet the only one, opportunity for Braille skill training from the physical environment. Both trainers and staff members of the center agree that the establishment of the institution in an area very close to the main asphalt road should be considered as a positive factor to the Braille skill training. According to a trainee, a location of the center nearer to the main high way means an easier it becomes for adult learners to reach for a class in due time, and this even very helpful for new comers. Similarly, a trainer reflects that the new comers in particular could be more challenged as the location of the center gets further away into sub-city's sophisticated areas to access. The following quote from the respondent trainer elaborates the later notion;

“Few years ago, this rehabilitation center was located in a place where the main asphalt road and even some convenient roads were found at far distance from it. As a result, many of the adults with visual impairment trainees used to encounter different challenges as they travel from and to the center to attend Braille skill trainings. But recently, the establishment has shifted to a place nearby the main asphalt road and hence, we and everybody in need to come to the rehabilitation center feels no difficulty to detect the location of our center and reach”. (Male, Trainer, Key Informant)

Opportunities related to Curriculum: In relation to the curriculum, respondents identified some opportunities from the nature of subject matter contents, preparations, and delivery at the rehabilitation center. Accordingly, a key informant trainee has reflected that the starting of teaching and learning practice with Amharic tools is an opportunity for Amharic speaking trainees. The respondent elaborated about this by indicating that the inception of skill training with a language familiar to learners is expected to facilitate a better understanding of the lessons.

A further opportunity mentioned in link with the curriculum was the fact that the contents of Braille skill training subjects were prepared and included in the curriculum based on the results of a need assessment study conducted on prior to developing the curriculum on adults with late

visual impairment. This is viewed by the trainer as an opportunity to creating a platform to intimately interact with trainees during teaching and learning. Mentioning about empathy, a trainee indicated that the trainer has usually employed an intimate and relevant approach to interact with learners. Here, the key informant trainee adds that the trainer frequently repeats and summarizes lessons, raises questions relevant and clear for learners, and invites trainees for reflection, and eventually checks up on where each of the trainee stands in terms of their knowledge and skills. Hence, the trainee concludes that this must be considered as an opportunity for Braille skill training as it helps the trainer keep up with learning momentum of learners.

CHAPTER FIVE

DISCUSSION

5.1 . Introduction

This study was initiated with a major objective of identifying and making a qualitative description of the practices, challenges, and opportunities of Braille Skill Training for adults with late visual impairment in AHRC. Employing the qualitative approach has made it possible for the researcher to inquire into and capture a considerable depth of data on the themes investigated. Thus, the analysis and emerging findings on each theme could be recognized as substantial to addressing the research problem i.e., gap in empirical knowledge of the practices, challenges, and opportunities of Braille Skill Training for adults with late visual impairment in a visual rehabilitation institution's context of Ethiopia. The findings could also prove to be unique and detailed enough so that they serve a package of implications to inform policies and practices of Braille skills literacy for adults with late visual impairment of the developing regions in general, and the case of rehabilitation centers in Ethiopia in particular. A discussion of the findings along with further analysis and reflections were presented in the following section.

5.2 . Practices of braille skill training

The concept of practice under this study was framed as any phenomenon that fulfills the definition established in the study as well as key informants' perceived activities of the program. Generally, the composition of practices and hierarchy of implementation were consistent across key informants' responses. Yet, details of the findings reveal that the practices were perceived to serve different, though not necessarily contrasting, purposes or needs of the respondents. The following part provides brief discussions for the results generated about each practice.

Orientation: An orientation practice - which principally involves a guidance and counseling support provided to newly joining adult trainees of the visual rehabilitation function was one and the primary practice among the others. Findings related to this practice in general, and the sub-activities in particular imply that the visual rehabilitation function has already recognized the possible repercussions of post birth or late visual impairment on adult victim's behavior. Of course, the existence of evidence in relation to the repercussions experienced by adults due to visual impairments has long been recognized in the field of rehabilitation (Millar, 1997). Such

profound conditions as perceived loss of self-worth, and depression were, for instance, among the major consequences identified to negatively impact adults behaviour (Nyman *et al.*, 2011).

In spite of these empiricisms, scientific evidences on how late visual impairment impacts the behaviour of adults under the context of Braille skills literacy seem to lack from a body of literature. In this regard, (Truitt & Suvak, 2001) asserted that the uniqueness of challenges encountered by people with late visual impairment should have been well recognized and the affected must be able to get proper counseling if they are going to embrace Braille. Such a void might reduce as this study submits the finding related to behavioural repercussions of late visual impairment among adult Braille skill trainees - the major consequence being a severe disorientation and, hence, the resulting difficulty to stay confident and receive any technical assistance by the affected adults.

The rehabilitation center aims to address such a difficulty encountered by adult trainees through provision of guidance and counseling prior to starting the Braille skill trainings. This type of support was also recommended to help facilitate Braille literacy of adults with late visual impairment (Truitt & Suvak, 2001). This study adds findings related to the function as put into action or as an independent practice and its emerging advantages for the adults with late visual impairment who attend Braille skill training sessions. Yet, results related to the existence, order of implementation, and importance of this particular support system i.e., orientation might not necessarily be generalized as consistent for other Braille literacy and related visual rehabilitations efforts since the study relied on information generated from a single context examined.

Teaching and Learning: Under the teaching and learning practice, the Braille skill training program was found to integrate imparting tactual skills as well as Braille reading and writing as the two specific activities. It is particularly interesting that the implementation of this practice begins with developing the tactual ability of trainees since the success of people with visual impairment with Braille literacy strictly ties to the well-being status of this sensory function.

This holds true particularly considering the difficulty of contents of Braille for comprehension by visual impairment learners. Of course, studies confirmed the need for extensive deliberations on similar interventions as people with visual impairment problems face sensory challenges of

different types to learn. For instance, many people with visual impairments were found with inability to use their hands for unknown reasons - resulting in “tactual defensiveness” (California Department of Education, 2006). Providing adequate attention to prior development of tactual abilities has even been recommendable for children who are about to begin braille skill training (Marshall & Hunt, 2002 cited in Njue *et al.*,2014). The impact of these inabilities will become even more intense as the age of trainees get older. Older adults are generally assumed to have greater difficulties in learning new skills (Millar, 1997).

The results related to teaching and learning practice appear to have presented fewer accounts of Braille reading and writing functions compared to the emphasis provided to developing tactual abilities. Some trainees might become more or quickly successful in developing tactual abilities than others, and yet this issue was not adequately deliberated up on by this study. Hence, the nature and management of transition from working on tactual abilities to Braille reading or writing seem to require further and contextual investigation.

Assessment: The two assessment methods vis-à-vis; continuous assessment and final evaluation, were found to constitute the third major Braille skill training practice. The presence of this practice, its purposes, and the stages at which each was told to be implemented do actually seem sympathetic phenomena to a corresponding event under any other conventional pedagogical or training interventions. However, and though participants could reflect some of the possible advantages drawn from the sub-practices, the assessment techniques generally appeared to have suffered from lacking a variety i.e., confining to a couple of tests and one final evaluation exam. This could represent a missing opportunity to enhance braille skill acquisition of the trainees as sufficiently diverse and alternative constituents of assessments were not adopted and implemented. In this regard, the possible advantages of, for instance, interactive peer group work and class activities could have been taken into consideration.

An equivocal issue was also the lack of scientific justification on why minimum pass points were fixed to be only three marks less than the total marks allocated for each assessment techniques. Fixing the pass points to such a single and maximum level would normally contribute to poor accommodation of trainees’ performance that can naturally be exhibited with different ranges of quality and speed. Yet, it must be also a subject of further scientific inquiries to identify the feasible and advantageous adjustments needed in that regard.

5.3. Challenges of braille skill training

Access to Adequate and Diverse Educational Materials: Access to sufficient and appropriate educational materials is a determining factor of success in any form of teaching and learning activity. This becomes even more critical to such programs as Braille skill trainings since, unlike many other forms of education, the special need of participants engaged with these programs necessitates greater reliance on alternative and adequate teaching and learning aids. Braille papers, slates, and stylus, Braille library service, books written in Braille, tape recorders, audio cassettes, and audio books are among the major resources evidenced to be relevant for Braille skill training programs of Ethiopia (Alemu and Zergaw, 2018).

In this study, different participant categories gave different levels of emphasis to the relevance and availability of challenges of education materials in the rehabilitation center under consideration. In this regard, lack of educational materials was not as visible to the trainee participants as it did to the staff members. The reduction in negative feelings of learners about shortage of materials could be linked to a relative success of the center's efforts to make some but fundamental learning materials adequately available to the trainees. These resources included braille papers and styles. Yet, others might also argue the possible perceptual bias created among trainees as it might be caused by either lack of awareness about the other materials needed for braille training or some other reasons could serve trainees not to feel bad about adequacy of materials. Trainees' unexpressed desire to keep institutional problems confidential and or need to avoid possible negative repercussions of exposing such information on trainees personal or Braille skills training attendance could be also argued as alternative reasons.

A contrasting response obtained from participant trainer contributes to strengthening the arguments presented for the prior results since he indicated that Braille books and relevant reference materials are not adequately available to trainees at AHRC. Scarcity in few but fundamental Braille teaching materials was identified as an important challenge to Braille skill learning of schools for the Blind in Sebeta, Ethiopia (Mitiku, 2020). For Martiniello, *et.al.*, 2020, this kind of challenge has even been discovered to prevail and negatively impact Braille skills training for adults of the western nations in general, and that of Canada where they conducted their study in particular.

Despite such differences were observed among participants' perception, respondents didn't clearly and commonly identify and discuss challenges related to some other materials including; audio devices, and various reference resources. In fact, though auditory tools and Braille reference books cannot replace the roles of the Braille in the curriculum, they are known to complement these resources and help ease the teaching and learning of Braille skills (California Department of Education, 2006).

Convenience of Physical Environment of the Center: The result of this study appears to reveal that the physical environment related challenge in general and classrooms' physical condition in particular is the most strongly and bitterly remarked physical environment related challenge to Braille skill training of adults with late visual impairment. The emphasis provided to this type of challenge by participants can be taken into even greater consideration since visual impairment trainees do naturally require an exceptionally convenient physical environment compared to the physical conditions that could be found relatively suitable for students without visual impairment. Yet, the impact of physical environments on learning has even been proven to be significant in an inclusive education intervention's context (Debele, 2015).

Generally, the presence of these challenges in the rehabilitation context investigated seem to defy rather than considering some state or international regulations for enhanced literacy of people with some sort of disability. In this regard, the United Nations asserts to every government to ensure the designing and construction of various establishments so that they can be used, entered or reached by persons with disabilities (UN General Assembly, 2007).

Nature of the Curriculum for Braille Skill Training: Braille skill training challenges were studied majorly in terms of the contents, delivery, and schedules of training at the rehabilitation center in consideration. The strongest concern that adult learners indicated was the challenges that they encounter in relation to the difficulty of Braille contents. Adult trainees experienced even more difficulty with English contractions. Interestingly, hence, the challenge relates to contents have already related concerns of delivery and schedule of the program. Indeed, the size and complexity of Braille symbols in general and contractions specifically are empirically evidenced to buy a considerable time and due attention of their delivery. A frequently encountering lack of time has been also found to challenge braille learning in a Sebeta school for blind of Ethiopia (Mitiku, 2020). Besides, imparting Braille skills for visual impairment learners

require twice the time taken by people with low vision (Kapur, 2018). Due to such difficulties, many of the Braille reading and writing resources even become irrelevant until learners hit a third-grade reading standard (Dogbe, 2020). This also shades further light on understanding how strong could the challenge be felt by participants of the current study, as they all were found to experience a complete visual impairment.

Personal Well Being Status of Trainees: Challenges related to personal wellbeing status were studied under categories vis-à-vis physical and emotional ones, and both were found equally important factors. Reduction in sense of touch leading to a poor tactual ability was the dominant physical challenge indicated by participants. This challenge was found to be pronounceable at the beginning of Braille learning, and seen to gradually alleviate in the case of adult braille learners of a Canadian braille training rehabilitation (Martiniello, *et.al.*, 2020). Discussing about tactile challenges, a natural tendency will be that the people with complete visual impairment will suffer from such challenges as compared to those with lower level of visual impairments. The impact could range from taking longer time to get information from Braille resources for learners experiencing a level of insensitive finger tips to a complete inability to read Braille resources by learners who do not have sense of touch (Khochen,2014).

Emotional challenges to the Braille skill training of adults with late visual impairment are generally emerging from either perceived or practically experienced causes. Respondent adult learner reflected that their perceived negative expectations prior to joining the Braille skill training program led to a gap in their emotional readiness to learn. Others have practically seen the negative consequences of their health problems, such as loose sense of touch, on Braille learning and became not confident of continuing the program. Though it also appears that the age of onset of visual impairment is known to influence learners' ability to acquire Braille skill, as evidenced in Carney *et al.*, 2003, the perception of learners about their age and its possible links with joining a school could also impact the training outcome.

The sum of all these emotional gaps would have even resulted in quitting the program by some trainees if it was not for a guidance and counseling support provided to them by the center. Hence, such support should be run throughout the training period by incorporating themes that could lead to convincing adult trainees about the ways and relevance of acquiring Braille skills. Otherwise, the more grown emotional gaps and pessimism towards the relevance of such a

program, the less satisfaction felt by adult learners towards the Braille resources and the ability to use them. Such experiences were observed to have led learners to poor efficiency in adoption and use of Braille media and devices (California Department of Education, 2006).

Social-Cultural and Economic Conditions of Trainees: Based on the perception of respondents, socio-cultural and economic challenges weigh less significant than the other categories of challenges. However, the impact of social factors was found to be no less significant than others in determining success of Braille skill training in a Canadian braille training rehabilitation for adults (Martiniello, *et.al.*, 2020). In this study, only few trainees required a need to get a support related to residential place from their relatives who live in Addis Ababa. Though the level of demand for attending Braille skill trainings by adults with late visual impairment was not determined, the indicated challenge could reveal that many more candidates for the program could continue suffering from lack of getting access to residential places in areas nearer to the location of such rehabilitation centers as the one in question. Lack of access to visual rehabilitation centers were found as an important challenge and investigated under institutional factors of braille skill training of adults in the Canadian vision rehabilitation context (Martiniello, *et.al.*, 2020).

The challenge becomes even more important for candidates who live further than Addis Ababa and regional towns where at least some supports could be obtained. Lack of access to residential area for the adult trainee and potential candidates could mainly relate to them in ability to afford rentals in Addis Ababa in general, and in locations close to the rehabilitation center. Though learners could get a level of financial supports from the rehabilitation center, such institutions could often fall short of capital to address further needs of the trainees among which paying their rents for residential places could be one. In fact, the center is even unable to afford buying some educational materials, which was indicated as a major economic challenge being experienced by the center.

5.4. Opportunities of braille skill training for adults with late visual impairment

Access to Adequate and Diverse Educational Materials: Trainees and staff members of the center revealed different levels of satisfaction towards adequacy of Braille skill training materials accessible to the center. In this regard, it sounds interesting and even relevant that the adult

trainees do somehow appear to see the availability of educational materials as sufficient since this notion alone could show that the trainees do not stick their attention around lack of materials often and, hence, contribute to poor emotional readiness to attend classes. The same was also perceived by the trainees as it helped respond to the social distancing policy implementation geared towards preventing the COVID-19 pandemic.

Convenience of Physical Environment of the Center: Choosing a convenient location to establish rehab centers, like the one in consideration, is crucial specially as it determines consequent experiences encountered by learners and staff members. Apart from reducing difficulties faced by visual impairment learners and guests, bringing rehab institutions' physical settings closer to highways will enhance promotion and thereby knowledge of such important organizations for others who could be interested to join and learn. The same will also boost a level of confidence of adults with visual impairment to decide to join such institutions.

Responses related to opportunities from the physical environment are almost negligent of any other opportunity than the location of the center. There were no opportunities identified in relation to classrooms' physical status and inside as well as outside facilities. Yet, existence of related opportunities would have been more relevant to the Braille skill learners, as for instance, availability of walking ways convenient for adults with visual impairment as well as classrooms physical inside facilities (such as tables, chairs etc.) conditions would have made mobility easier.

Nature of the Curriculum for Braille Skill Training: A hierarchy in content delivery of different subjects is generally set to run from less difficult and familiar issues to more difficult and stranger issues so that the learning ends up with better impacts. In this study, the familiarity of language with which the initial subjects of training were prepared was found an important determinant of imparting the Braille skills. Braille contents by themselves are composed of numerous symbols and mode of expressions which are usually strange for the blind learners. Hence, beginning training with second or other languages, case in point is English, for trainees would have meant increasing the difficulty to comprehend and smoothly transit to next stage of learning among trainees. This becomes even more relevant in terms evaluating the demanding nature of verbal abilities of learning during adulthood as compared to being a child. Starting lessons through the use of a familiar language was, therefore, considered as an opportunity that

facilitated acquiring Braille skills during training.

Apart from the importance of beginning training with Braille tools prepared in languages familiar to the trainers, respondents view that conducting need assessment of learners prior to running the program has helped in developing a good curriculum for Braille skill training. In spite of the reflection, importance of conducting need assessment, responses on specific impacts of the need assessment were not sufficiently elaborated in the study. Empirical evidence on the possible results of conducting such need assessments provide some clues. According to a study conducted in 2018 on Challenges Experienced by Students with Visual Impairment in Education, for instance, need assessment of adult with visual impairment learners will enable to understand learners' academic abilities, as well as their learning styles (Kapur, 2018). By obtaining these properties, both learners and trainers will find a way to come on same board during the training sessions.

CHAPTER SIX

Conclusion and Recommendation

6.1. Conclusion

Pertaining to practices of Braille skill training programs at the rehabilitation center, respondents were able to identify three major activities and then they classified the major activities in to five further sub-activities. These were the orientation practice which was identified with guidance and counseling sub-practice, the teaching and learning practice involving two sub-activities called exercising tactual skills, and training of Braille reading as well as writing skills, and the assessment practice containing such sub-activities as conducting continuous assessment and final evaluation. Generally, these major activities which were identified as practices and their classification in to sub-activities make part of the relatively unique findings obtained through the current study.

The second objective of the study, i.e., describing main challenges to Braille skill training for adults with late visual impairment, was addressed through organizing responses of key informants under five major categories. These categories were domains of challenges related to; educational materials, physical environment, curriculum, personal wellbeing status, and socio-cultural and economic aspects. Each of the categories represented a fairly meaningful level of challenges to the Braille skill training programs under consideration. Yet, poor status of the physical environment in general and destitute classrooms' conditions in particular were expressed with great emphasis among participants followed by a level of their concern about the inadequacy of one year duration allocated for completing the Braille skill training program.

Finally, different phenomena considered as opportunities for the adults with late visual impairment while attending the Braille skill training program were identified by respondents. Among these; accessibility of diverse educational materials to trainees, proximity of the rehabilitation center's location to main roads, and the existence of trainer's empathetic approach towards adult trainees were the major ones. If it was not for a detrimental role of the later opportunity, i.e., empathy of trainers, some trainees would have even decided dropping off from the training program. This can also be considered as a strategic gesture that links social and emotional issues and, hence, its exploitation geared towards addressing challenges related to both

aspects of adult with late visual impairment attendants of Braille skill training programs sounds vital.

6.2. Recommendations

This section provides a set of relevant points that the researcher derived as recommendation from the findings of the study. Thus, different stakeholders from research, policy, and practice institutions or professionals should be able to take respective issues among the presented recommendations for their consideration and proper actions.

- The findings of this study are uniquely typical to adults identified with late visual impairments who participate in Braille skill training programs at a single rehabilitation center. Thus, further study is recommended to identify peculiarities of the subjects investigated from experiences of adult trainees with partial visual impairment across different rehabilitation centers.
- Though orientation was valued as a crucial and prior practice of the Braille skill training program, its implemented only through a single session guidance and counseling service. Hence, conducting orientation on a continuous and multidisciplinary base is advisable to enable similar targets be impacted positively and consistently while staying throughout the program.
- The process of implementing the practices explored in this study do largely lack a space for parallel interaction among trainee adults, though they entertained interaction between learners and trainers. Hence, creating social platforms for interaction between adult trainees during planning and implementing the practices should get a fair share of attention so that the skill acquisition becomes more efficient.
- The nature and proper management of transitions from each practice or sub-practice to consequent ones was not clearly revealed in this study. The subject remains problematic, and hence, seems to require further investigation.

- Only researcher's own speculations of the possible reasons for differences in responses of trainee and trainer participant over educational materials related challenges were made in the study. Hence, further investigations could find it worth framing their interests around identifying the relevance and reasons of such differences for optimizing accessibility of the materials.
- Challenges imposed by poor physical status of classrooms and related facilities came with strongest tones of respondents. This could contradict with the importance of arranging up to standard facilities to enable functions of adults with visual impairment in general, and making their Braille skill training impactful in particular. Hence, potential stakeholders dealing with financing and construction of the facilities should recognize the same and address the corresponding problems in practice.
- The one-year duration allocated for completion of Braille skill training was indicated by respondents as inadequate for, specifically, adult learners with late visual impairment. Unlike the case of training sighted targets, therefore, Braille skill training institutions and concerned stakeholders should consider and invest in the extra time requirement to the advantage of adult with late visual impairment trainees of Braille skills.
- A convenience or proximity of location of rehabilitation centers was described as an opportunity to reduce difficulties faced by visual impairment learners and guests visiting the rehabilitation center. Hence, it is important that new Braille training interventions consider this issue prior to establishing their vision rehabilitation centers.
- Preparing contents of the training-based results of a need assessment conducted for adults with late visual impairment was found to be a curriculum related opportunity, and hence, it is important that Braille skill training institutions recognize the same to enable proper skill acquisition among adult trainees.

- Another opportunity identified in relation to the curriculum was the fact that the training is offered in different or alternative languages and its inception with delivery in familiar language. Braille training institutions should, therefore, seek ways of tapping into similar opportunities.
- Finally, further research is deemed important to investigate the existence and impacts of opportunities related to personal wellbeing and socio-economic aspects which are missing in this study.

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8. Appendix

Appendix 1: An Interview Schedule for Key Informants (Trainees)

Consent

My name is MeskeremBehailu. I am a post graduate student of special needs education at Addis Ababa University. I am conducting the research for the requirement of master's degree; this interview guide is prepared with intentions of gathering information required for an MA Thesis Research Project entitled "*The Practice, Challenges and Opportunities of Braille Skill Training for Adults with late Visual Impairment in Addis Hiwot Rehabilitation Center*". Through this study, it is also expected to elicit the practice, major Challenges and Opportunities of Braille skill training as experienced by the adult with late visual impairment trainees of the rehabilitation center.

I would like to request your kind cooperation and patience in providing accurate and reliable responses for the questions. Do please be notified also that the information obtained through this guide will only be used for the research purpose and your answers will be kept confidential.

Thank you in advance

General Information

1. The date of the interview: _____

I. Personal Information of Key Informant Trainee

1. Respondent's Name: _____

2. Sex _____ 1) Male 2) Female

3. Age: _____

4. Age of onset of visual impairment: _____

5. Educational qualification _____ 1) PhD 2) MA/M.Sc. 3) BA/B.Sc. 4) Diploma 5) Others
(specify) _____

6. Field of study (specialization) _____

7. Current Occupation: _____

II. Information related to Practices of Braille skill training at AHRC

1. Please explain to me the major activities or practices involved in your Braille skill training at AHRC. You may consider responding to the question by categorizing the activities or supports you received as before, during, and after the training sessions are carried out.
2. Provide me with details of the processes or purposes of each activity as well as major advantages or benefits you gained from them, if any.

III. Information related to Challenges of Braille skill training for Adults with Late Visual Impairment at AHRC

1. How do you judge the adequacy of Braille Learning Materials available to you at AHRC? Elaborate on the extent and types of materials accessible or not accessible to you.
2. Do you think that there are any challenges in relation to the physical condition of your class or the center that might constrain your Braille skill learning process or its efficiency? If there are any, please provide me with details on what the conditions are and how they became challenges.
3. What is your perception about the level of difficulty or complexity of contents of your Braille skill training materials and methods as well as duration of delivery (curriculum)?
4. Do you feel that you have physical or emotional conditions of your own (other than the visual impairment) which might challenge a proper/efficient acquisition of Braille skills? If so, what are these conditions and how do they act as a challenge?
5. Are there any social or cultural issues that hindered you from attending Braille Skill Training program at AHRC? If there are, please provide me with detailed accounts of each
6. Do you have any economic related issues that might have challenged you while attending Braille Skill Training program at AHRC? If there are, elaborate them for me.

III. Information related to Opportunities of Braille skill training for Adults with Late Visual Impairment at AHRC

1. What are the major properties of Braille Learning Materials available to you at AHRC that facilitate skills acquisition? Elaborate on the extent and types of advantages of the materials.
2. Do you think that there are any physical conditions of your class or the center that enhanced or facilitated better conduction of the Braille skills training and acquisition of lessons?

If there are any, please provide me with details on what the conditions are and how they became opportunities for you while attending the Braille skills training at AHRC.

3. Do you find any characteristics of the subjects and methods of delivery of Braille skills at AHRC that can be considered as a good opportunity for you? Elaborate each for me.
4. Do you feel that you have any physical or emotional conditions of your own which might or will have contributed to improved level of engagement and success from the Braille skills training program at AHRC? If so, what are these conditions and why do you consider them as opportunities?
5. Are there any social or cultural issues that enhanced or facilitated your attendance of the Braille Skill Training program at AHRC? If there are, please provide me with detailed accounts of each.
6. Do you have any economic related issues that you found helpful while attending Braille Skill Training program at AHRC? If there are, elaborate them for me.

Appendix 2: An Interview Schedule for Key Informants (Trainer)

Consent

My name is Meskerem Behailu. I am a post graduate student of special needs education at Addis Ababa University. I am conducting the research for the requirement of master's degree; this interview guide is prepared with intentions of gathering information required for an MA Thesis Research Project entitled "*The Practice, Challenges and Opportunities of Braille Skill Training for Adults with late Visual Impairment in Addis Hiwot Rehabilitation Center*". Through this study, it is also expected to elicit the practice, major Challenges and Opportunities of Braille skill training as experienced by the adult with late visual impairment trainees of the rehabilitation center.

I would like to request your kind cooperation and patience in providing accurate and reliable responses for the questions. Do please be notified also that the information obtained through this guide will only be used for the research purpose and your answers will be kept confidential.

Thank you in advance

I. Personal Information

1. Respondent's Name: _____
2. Age _____
3. Sex _____ 1) Male 2) Female
4. Educational qualification _____ 1) PhD 2) MA/M.Sc. 3) BA/B.Sc. 4) Diploma
5) Others (specify) _____
6. Field of study (specialization) _____
7. Number of years of service (in the rehabilitation center) _____

II. Information related to Practices of Braille skill training at AHRC

1. Could you please explain to me the major activities or practices involved in the Braille skill training program being conducted at AHRC? Indicate also the hierarchy or procedures, and processes of their implementation as well as who is/are mainly responsible for each practice.
2. Is there any counseling and guidance service by qualified experts or professionals provided to adults with late visual impairment who attend the Braille skill training program? If the answer is yes, give me details on when, how, and why this service is put into action?

III. Information related to Challenges of Braille skill training for Adults with Late Visual Impairment at AHRC

1. How is the accessibility of teaching materials needed for Braille literacy skills at AHRC? Elaborate on the extent and types of materials accessible or not accessible to both trainees and trainers. If there is a discrepancy in accessibility or availability of important materials, how do you or the center addresses such a challenge?
2. What is your perception or experiences about physical conditions of the classes or the center that might have challenged success or process of the Braille skill training program at AHRC?
3. How do you evaluate the late visually impaired adult trainee's abilities, skills, motivation, interests for the training? Have you ever encountered certain constraints in that regard? Give me details about that please.
4. What is your judgment about the level of difficulty or complexity of contents of the Braille skill training materials and methods as well as duration of delivery for adults with late visual impairment?
5. Do you think that there are any social, cultural, or economic related hindrances experienced by the late visually impaired adult trainees in relation to attending the Braille skill literacy program?
6. Are there any additional challenges that hinder Braille skill training process at AHRC? If the answer is yes please mention them one by one and tell me detail How they are challenged?

III. Information related to Opportunities of Braille skill training for Adults with Late Visual Impairment at AHRC

1. What are the opportunities, that you think, available to the late visually impaired adult trainees of Braille skill training program at AHRC in relation to educational materials?
2. Do you think that there are any physical conditions of classes or the center that enhanced or facilitated better conduction of the Braille skills training and acquisition of lessons at AHRC? If there are any, please provide me with details on what the conditions are and how they became opportunities for the trainees.
3. Do you find any characteristics of the subjects and methods of delivery of Braille skills at AHRC that can be considered as a good opportunity for the visually impaired adult trainees' success? If so, elaborate each for me.
4. Do you feel that there are any physical or emotional conditions of the adult trainees which might or will have contributed to improved level of their engagement with and success from the Braille skills training program at AHRC? If so, what are these conditions and why do you consider them as opportunities?
5. Are there any social or cultural issues that enhanced or facilitated visually impaired adult trainees' attendance of the Braille Skill Training program at AHRC? If there are, please provide me with detailed accounts of each.
6. Can you identify any economic related issues that you found helpful for the visually impaired adult trainees to attend Braille Skill Training program at AHRC? If there are, elaborate them for me.

Appendix 3: Observation Checklist

I. General Information

1. Date of observation: _____
2. Place/Location of observation: _____
3. Theme of the Lesson: _____
4. Period of observation (Length of time): _____

II. Challenges and Opportunities of Braille Skill Training

No	Focused point	Yes	No
1.	Center's physical conditions is suitable for adults with visual impairment		
2.	The class room construction is appropriate for teaching and learning process (Hight, widths)		
3.	Appropriate arrangement of furniture (Distance of the chair)		
4.	The library is accessible		
5.	Enough Educational Materials		
6.	The trainees have good interaction with trainers		
7.	Trainees are individually aided		
8.	Trainees have the opportunity to touch and recognize several types of Braille code		

Appendix 4: Checklist Used to Collect Background Information about AHRC

1. When, where, and by whom the center was established? for what purpose as well?
2. What other literacy programs (than Braille skill taring) and services does the center provides?
3. How many adults with late visual impairment have been trained with Braille skills at AHRC so far? Provide me with a list of the late visually impaired adult trainees that currently attend Braille skill training program at AHRC, include their sex, age, and related demography as well.