

Perceived Support Services for Undergraduate Students with Disabilities at Higher Education Institutions in Ethiopia

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Abstract

Access to enrollment of students with disabilities (SWDs) at higher education has increased in the last few decades both globally and in Ethiopia. Support is at the heart of successful completion of higher education. The present study was intended to investigate the perception of undergraduate SWDs about the nature of support services (SS) they received. It specifically examined the received SS (pedagogical, institutional and psychosocial variables), its accessibility and adequacy. To achieve its objectives, pragmatic research philosophy and mixed research design was employed. A total of 256 participants were selected from four universities (Addis Ababa, Bahir Dar, Gondar and Dilla) using stratified random sampling combined with purposive sampling techniques. Questionnaire, semi structured interview and Focus Group Discussion (FGD) were employed for data collection. Data were analyzed using thematic analysis, descriptive statistics, one sample t test and MANOVA. The findings generally revealed that the supports were insufficient. The type of impairments seemed to make a more significant difference in obtaining supports. Thus, despite valuable steps taken towards supporting SWDs, it was still not fully structured and implemented to fit with students' support needs. Hence, this study recommended that higher education institutions need to be guided by comprehensively set national policy and strategic framework to improve their efficiency and effectiveness in supporting SWDs.

Key terms: Support services, pedagogical, institutional, psychosocial, Student with disabilities (SWDs), student with hearing impairment (SwHI), student with visual impairment (SwVI) and student with Motor impairment (SwMI)

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Introduction

Students with disabilities (SWDs) have the rights for equal access to higher education (HE). This requires a serious consideration of their respective educational, psychosocial and financial needs to successfully participate in the system which demands institutions to fulfill their obligations to make sure that SWDs are equally benefited from educational programs. Researchers in the field of disability services in HE do agree that institutions have not done enough to promote equal opportunities for SWDs (Ambati, 2015; Arnold, 2007; Dong & Lucase, 2016). Ethiopian Ministry of Education (MoE) annual abstract (2016) reported that, the total number of SWDs at governmental Higher Education Institutions (HEIs) was 1,482. Of these, 94% (396 females and 1085 males) of the SWDs attended undergraduate studies. In terms of types of impairment; the highest proportion enrolled students with motor impairment, middle with visual impairment and the least are students with hearing impairment (MoE, 2016). This data didn't make any estimation on the proportion of SWDs at HEIs. However, some research reports made a very similar estimation of 0.5 to 1% SWDs enrolled in Ethiopian Higher Education Institutions (EHEIs) (UNESCO, 1997; Yared, 2008).

Furthermore, getting access to the institution and the curriculum are two different but intertwined aspects of learning (Konur, 2006). Studies revealed that plenty of SWDs at HEIs experienced multidimensional challenges and problems in accessing the curriculum (AAU, 2014; Fuller, Healey, Bradley & Hall, 2004; Dalia & Naomi, 2001; Gilson & Dymond, 2012; Holloway, 2001; Johnson, 2006; Kim & Lee, 2016; Konur, 2006; O'Neill, Markward & French, 2012; Tirusew et al., 2014; Vickerman & Blundell, 2010; Yared, 2008). The effect of barriers could be minimized by devising Support Services (SS) such as academic, social and financial ones. Tinto (2014) asserts the reputation of support at HEIs by stating, "Providing students' access to higher education; without support, is not opportunity" (p.6). Though there are considerable improvements on admissions of SWDs in most HEIs, very limited preparation and organization of resources is observed. Even, the provisions in most cases are inconsistent and lack coordination (Getzel, 2008; Teferi, 2018). As a result, SWDs faced a lot of challenges, which threatened their academic persistence and success (Holloway, 2001; McConnell, 1981; Paul, 2000; Tinklin, Riddell & Wilson, 2004).

To the best of the knowledge of the authors, there seems to have scarcity of research works on HE and disability issues in general and SS variables in particular. A few

specific, low scale and fragmented studies were conducted in the country (For example; Asmerom, 2019; Asres, 2018; Tefferi, 2018; Tirussew et al., 2014) that reported the situations, challenges and inclusion of SWDs. In terms of variables, the most commonly researched constructs were related to physical accessibility, societal and attitudinal barriers as well as personal attributes (e.g., self-advocacy and self-determination). Furthermore, most studies done on specific impairment types, specific locations or investigate SS as sub-component of their study variables (for example; Asmerom, 2019; Asres, 2018; Tefferi, 2018). This lends limited details, scope and comparative analysis of SS across different groups of learners. Even, most researchers recommended the need to conduct further research on disability specific SS variables (Jorgestn et al., 2005; Wessel, 2009). Hence, the present study is dedicated to bridge the aforementioned research gaps.

Despite the visible and encouraging trends regarding provision of special support services to SWDs in EHEIs, there is a gap in the identification of the educational needs of the students as well as the provision of quality support services. Some institutions directly employ support programs which students were getting in their secondary education (AAU, 2014; Tirusew et al., 2014; Yared, 2008). This trend fails to take into account the contextual relevance, time factor and efficient contribution of SSs to the success of SWDs in their higher education study. Provisions are arbitrary chosen by either administrators or SWDs themselves. The services are dominated by administrative decisions with less emphasis on professionals' opinions and empirical evidences. As a result, it is very difficult to ascertain the efficiency of provisions and its responsiveness to the needs of SWDs. Research reports also disclosed such inconsistent, less organized and diversified service provision modalities across institutions (Tirusew et al., 2014; Yared, 2008).

The researchers, serving as instructors at HEIs witnessed plenty of social and physical barriers which hinder the psychosocial adjustment and educational achievement of SWDs. For instance, most students with visual impairment (SWVI) were examined in corridors; they may not have an assigned reader; nature of some courses like ICT demand differentiation (require special software for SWVI); laboratory sessions may not also be accessible to students with motor impairment (SWMI). Thus, rethinking about effectiveness of available SS approaches to SWDs in HEIs will help to improve type of services rendered to them at HEIs. Generally, inefficiency of providing needs based and responsive SSs to SWDs could generally affect the countries' overall development and realization of independent, productive and inclusive society.

Thus, this study was intended to examine SS perceptions (e.g., pedagogical, institutional and psychosocial situations) of SWDs in HEIs. The study was guided by the following research questions;

- How do students with disabilities perceive the support services they experience at higher education institutions?
- Do higher education institutions offer adequate support services to Students with Disabilities?
- Are there variations on the support services among Students with different types of Disabilities at higher education institutions?

Review of Related Literature

Support Services (SS) includes but not limited to accessible classrooms, exam accommodations, assistive technology, classroom assistance, learning outside the classroom, program requirements, course waiver/substitution, interpreter services as well as learning strategies and study skills assistance (Brinckerhoff, McGuire & Shaw, 2002; O’Neill et al., 2012). A survey study by UNESCO (1999) broadly classified provided academic support services in the studied HEIs into two: study adjustments and pedagogical supports. The former includes services such as flexible time frame, flexible content and modification in examinations. The later focuses on tutorial/ assistant, adapted texts, technical equipment and training in use of equipment. Additionally, support provisions in HEI should focus on curriculum, teaching and learning, assessment, and access to educational resources (UNESCO, 1994).

In the present study SSs are operationalized to cover pedagogical, institutional and psychosocial support dimensions. Pedagogical SSs includes direct supports rendered through implementing the curriculum, classroom instructions and assessment methods. Institutional SSs covers indirect provisions related with instructional materials and administrative services. While psychosocial SS refers to psychological and social supports rendered to SWDs to capacitate their competence to cope up with challenges in their study.

Many studies confirm that SWDs experienced barriers related to most SSs dimensions such as rigid curriculum, informal restrictions on admission, inaccessibility of course contents, lack of relevant support services (interpreters, instructional approaches, etc.) and instructors as well as administrators’ negative perceptions of students competency

and instructors' lack of willingness to provide reasonable accommodations (Asemerom, 2019; Asres, 2018; Fuller et al., 2004; Gelbar et al., 2015; Hopkins, 2011; Jacklin et al., 2007; Kendall, 2016; Konur, 2006; McConnell, 1981; Mortimore, 2013; Mosia & Phasha, 2017; Redpath et al., 2013; Schreuer & Sachs, 2014; Sheila & Sereta, 2004; Tirussew et al., 2014; UNESCO, 1999; Yared, 2008).

The aforementioned pedagogical barriers, such as curricular, instructional and assessment dimensions could be minimized by using flexible teaching techniques, enhancing the quality and equity of instructional support provision for all and broadening the awareness, needs and demands of support services for both students and instructors (Fuller et al., 2004; Konur, 2006; McConnell, 1981). Moreover, devising special strategies to address both the general as well as specific educational needs of students with different disabilities is reported as very important (Asemerom, 2019; Fuller et al., 2004; Konur, 2006; McConnell, 1981; Tirussew et al., 2014). For instance, adjustments could be made by diversifying presentation formats that include presenting course contents in a paper text, sign language, audio, Braille, scripts or electronic formats (Holloway, 2001; Konur; McConnell; Vickerman & Blundell, 2010).

SS provision related to assessment practices is open to argumentation. Some scholars like Sharp and Earle (2000) argue against the unfair advantage that assessment related adjustments are given to SWDs. Yet, the present study argues for the lines Konur (2002) position that without alternative assessment, instructors may face difficulty in measuring students' academic achievement and they would be forced to shift to assessment of students' disability. Therefore, lack of alternative assessment could widen discriminatory practices in education and affect SWDs' actual demonstration of their potential.

Regarding institutional support services, inconsistent research findings are evident; indicating that the nature, scope and type of materialistic and administrative provisions are arbitrary and inconsistent across settings (Asres, 2018; Scott et al., 2002; Yared, 2008). Moreover, some policy documents argue that the provision of SSs shall be held by academic units and instructors (FDRE, 2009). The present study supports the views of contemporary researchers such as Shaw and Dukes (2001), Dukes (2006) and Mosia and Phasha (2017) that advocate the role of disability support centers in introducing and implementing institution wide SSs. Besides, studies indicate that there is a tendency by most HEIs, of fulfilling the minimum requirements of rendering support services,

focusing on the most common and less expensive ones than utilizing the institutions' resources for broadening and improving support alternatives (Tagayuna et al., 2005).

Psychosocial support services have undeniable relevance in enhancing students' academic performance, especially for SWDs and educational experts as well as others could do much to impact effective functioning of PWDs. Psychosocial support services should be rendered as an integral part of any academic or other support service schemes at all level of education of SWDs (Ashenafi, 2014; Fantahun & Tirussew, 2017; Oluka & Okorie, 2014; Tirussew, n.d.; Tirussew, 2000; Tirussew et al., 2014). Accordingly, psychosocial support services like social skills, study skills, life skills, self-advocacy, guidance and counseling and peer volunteer services are rendered in most of Ethiopia Higher Education Institutions (EHEIs) (Assefa, 2014; Asmerom, 2019; Asres, 2018; Tirussew et al. ; Yared, 2008). However, the adequacy and accessibility of those services are not ensured. Researchers in the area claimed that most psychosocial support services are given in inconvenient places. Besides, their durations are very short and information about such services is not timely disseminated to most users. In contrast, there are also institutions which overlook the provision of such supports at all (Assefa; Dawit, 2014; Fantahun & Tirussew, 2017; Tirussew et al.).

Theoretically, Social-Constructionist Theory of Vygotsky claims that the study of teaching and education of SWDs shall focus on the importance of making distinction between primary disabilities and succeeding symptoms. The primary difficulty is less subject to remediation but secondary consequences of primary disability are more responsive to treatment. Yet secondary disability can be eliminated by creating alternative but essentially equal roads for cultural development (Gindis, 2003; Langford, 2005). Moreover, SWD requires different methods of teaching and learning aligned with their psychological tools. The socio-cultural meaning, however, remains the same for both SW and WO disability. The use of alternative, modified and specialized psychological tools in explaining the same content of education creates equal learning opportunities. Since meaning is more important than methods, the essence of an educational environment that is responsive for all is based on its potential to substitute psychological tools by maintaining meanings (Vygotsky, 1978). The process of appropriation of psychological tools is determined by the nature of the disability and correlated modifications of teaching methods (Gindis, 2003). Hence, socio-cultural theory claimed that disability could be both preventive and intervened through responsive educational system.

Moreover, Social Model of Disability endorsed institutions serving SWDs to arrange comprehensive learning environment that could be responsive to SWDs individual needs and abilities (Hughes & Paterson, 1997; Oliver, 2013). The model clearly stated that participation and success of SWDs could be constrained by socially constructed barriers like inaccessible curriculum components (Oliver & Barnes, 2010; Rodina, 2006; Terzi, 2004). Similarly, researchers usually recommended the need for support services that could address SWDs barriers and create a fair playing field to all students at HEIs (Stodden, 2015; Stooden & Conway, 2003; Tinklin & Hall, 1999). In relation to disability support services at HEIs, the model struggles towards shifting the focus from the individual and their impairment to the institutional environment which they function in (Levitt, 2017; Thornton & Downs, 2010). A study by Thornton & Downs (2010) further asserts that SSs at HEIs shall base on self-development of SWDs, influences faculties to embrace the concept of disability as socially constructed and the need to focus on improving the learning environment by identification of barriers. Service providers should change their service provision modalities rather than focusing on students deficits. Recently, it becomes advisable to look at the campus learning environment and deficits in it than investing more on accommodating for students deficits. Support service providers need to be keen about the instructional and curricular design beyond the mere focus on policies and its enforcements at HEIs. Moreover, disability support services should claim environmental interventions helpful not only for SWDs but to all students within the university. This demands a wider collaboration and networking efforts with faculty, teachers, support services administrators at various levels, faculty staffs and information technology services (Mole, 2012; Levitt, 2017; Thornton & Downs, 2010).

Furthermore, the social model of disability tried to develop different implementation tools, one of which is Universal Design for Instruction (UDI) was widely promoted in the context of HEIs. “UDI is an approach to teaching that consists of the proactive design and use of inclusive instructional strategies that benefit a broad range of learners, including students with disabilities” (Block, Loewen & Kroeger, 2006; p. 118).

The aim of UDI is not to introduce a total shift to new teaching approach, rather it is a guide for faculty in reviewing their approach to teaching and refining instructional strategies and methods in recognition of the needs of diverse learners with diverse experiences (McGuire & Scott, 2006). This study also uses a similar premise while using UDI as a theoretical framework. It is the belief of the researchers that most qualities of effective instructional practices even without additional/ specialized accommodations could affect academic success of SWD in HEIs.

To sum up, SWDs experienced many academic barriers mostly related to socially constructed and unresponsive systems. In Ethiopia, though there are few survey studies on a list of support services, educational situations, challenges and opportunities of SWDs in HEIs, little effort has been made to explore and examine the adequacy of those support services. HEIs have been offering a wide range of supports for SWDs either through disability service centers, gender offices, specific academic units or collaborating with various NGOs. However, the services are usually chosen and provided in a disorganized manner, without testing their effectiveness. Therefore, to inform evidence based recommendations this study intends to investigate the adequacy and accessibility of SSs in the studied HEIs.

Methods

Philosophical underpinnings

Pragmatism is a “worldview that arises out of actions, situations, and consequences (Creswell, 2014 p.6)”. Pragmatism in the context of research approach does not solely recommend a certain research paradigm. Instead, it suggests researchers to have the worldview to be interpreted in a continuum than dichotomous poles (Creswell, 2014; Klinger & Boardman, 2011).

Ontologically, pragmatists believe both on the premise of positivists; a “real world” out there, as well as constructivists’ belief on the individual’s unique interpretation of reality. Thus, they assert on the notion of “inter-subjectivity” to encapsulate the duality of defining social reality (Morgan, 2007).

In terms of the mode of enquiry, pragmatism opens an opportunity to employ multiple methods, worldviews and assumptions as well as different forms of data collection and analysis (Creswell, 2014; Klinger & Boardman, 2011). Hence pragmatism is a philosophical underpinning for mixed methods studies and the present study.

Study Design

Mixed methods research is a procedure for collecting, analyzing and combining both quantitative and qualitative data in a single study or a series of studies to understand a research problem (Creswell, 2012; Gay, Mills & Airasian, 2012). This study was intended to understand the status and determine the adequacy of SSs provision for SWDs at Higher Education Institutions (HEIs). That is, this study employed a convergent

parallel mixed methods design that could address the intended purpose (Creswell, 2012; Fetters, Curry & Creswell, 2013). The quantitative data aimed to examine the adequacy of provided SSs whereas; the qualitative data were not only to substantiate the statistical data on participants' perception on the existing SSs but also to explore officials' views about the existing SSs (Creswell, 2012; Fetters et al., 2013).

Population and sampling techniques

The target population in this study was all undergraduate students with the three types of disabilities (SwVI, SwHI and SwMI) in Public Higher Education Institutions (PHEIs). By considering availability of students with at least two types of disability and representativeness, this study took 10 HEIs as its sampling frame. Then four universities; Addis Ababa University (AAU), Bahir Dar University (BDU), Dilla University (DU) and University of Gondar (UoG) were taken using simple random sampling method.

Study participants were selected by using concurrent multi-level sampling design (Collins, Onwuegbuzie & Jiao, 2006; Onwuegbuzie & Collins, 2007). This specifically employed both purposive and stratified random sampling schemes to draw qualitative and quantitative data sources respectively.

More information on the sampling procedure is given in Table 1. Based on the table first, a list of ten universities in the survey was taken and coded. Then, lottery method was employed to select four universities (AAU, DU, BDU and UOG). Next, the total number of senior SWDs; 440, aggregated by type of disability was chosen from the four universities. The total sample size for each stratum (the university first & disability category later) was proportionally determined by using Chocran formula. At the same time, readers for SWVI and interpreters for SwHI were chosen and consulted by the help of respective institutions' support officers. Finally, FGD informants and support officers were selected purposefully. To get the most resourceful participants, FGD informants were carefully selected by the help of disability support centers' officers. In general, the total number of participants for this study was 261 (228 SWDs for the survey, 3 disability support directors/ delegates for interview, 30 informants for FGD).

Table 1 : *Summary of samples drawn from each of the sampling frame*

No	Institutions name	Total number of senior SWDs	Purpose	Population by disability			Samples			Total
				VI	HI	MI	VI	HI	MI	
1	AAU	217	Filling questionnaire	85	91	41	44	47	21	112
2	UOG	56	Filling questionnaire	12	1	43	9	-	24	33
3	DU	50	Filling questionnaire	20	5	25	10	-	13	23
4	BDU	117	Filling questionnaire	107	2	8	56	-	4	60
	Total	440		224	99	117	119	47	62	228

Data collection instruments

Both qualitative and quantitative data collection tools were employed to complement and triangulate the results of the study. These were questionnaire, semi structured interview and FGD.

The semi structured interview and FGD guides were developed based on relevant literature drawn on the theoretical framework of the current study and the guide questions were designed in a way that could stimulate informants to share their opinion and experiences concerning SSs. The FGD primarily intended to explore the SS experiences of students with different types of disabilities while semi structured interview was conducted with the officers to understand their general views about the status of SS in their respective universities.

Furthermore, this study employed a 93 items self-developed Likert scale questionnaire designed to assess the perception of SWDs on HEIs SS provision status and practices. This self-developed SS Scale had six sub scales analyzed under the three SS dimensions: pedagogical SS (sub- scales; curricular practice (16 items), instructional provisions (19 items) and assessment practices (17 items)), institutional SS dimension (sub-scales- instructional materials (11), & administrative supports (13 items)) and the psychosocial SS dimension (17 items). The scale was developed by the researchers based on the principles and indicators of UDI (Davies, 2013; McGuire, Scott & Shaw, 2006; Swail, Redd & Perna, 2003). The development specifically followed steps suggested by Morgan, Gliner & Harmon (2006 on questionnaire design and the initial items pool was identified using UDI and study reports (Davies, 2013; McGuire et al., 2006; Swail

Seven professionals with the rank of lecturer and above were involved in the instrument validation process. Each item was evaluated by experts and recommended revisions were made. All professionals suggested constructive feedback to maintain the standard and quality of the survey questionnaire. As a result, some items were discarded and others were rephrased. In this way, the overall quality of the instruments were maintained and the items were further refined with pilot testing.

The internal consistency reliability of the scale was calculated using Cronbach alpha. For each sub-scale and for the full scale, Cronbach alpha is presented in Table 2 as follows:

Table 2: *Internal consistency reliability of the instrument*

Scale	No. of Items	Cronbach Alpha
Curricular support	16	.89
Instructional practice	19	.87
Assessment related support	17	.87
Instructional materials	11	.878
Administrative	13	.884
Psychosocial	17	.891
Full scale	93	.899

SWDs responded to each item on a scale ranging from 1(strongly disagree) to 7 (Strongly Agree). At the same time, a composite score for each of the six subscales were computed separately, and a high score for each indicated that the institution was sufficiently providing the relevant SSs to SWDs.

Procedure

Prior to the actual data collection, an attempt was made to explain the purpose of the study and thereby to get the oral consent of the participants. Six FGDs were conducted (two FGDs for each types; SwVI, SwHI and SwMI). The FGD was recorded by using field notes and audio recordings. On average each session took a period of 90 to 110 minutes and all sessions were moderated by the researchers. Besides, sign language interpreters were facilitating the FGD sessions held with SwHI. Moreover, interviews were held with officers in their own offices and it lasted from 75 to 90 minutes during and after office hours. All interviews were tape recorded and captured by field notes. Then the transcribed data were coded and categorized by themes.

Data Analysis

Thematic and descriptive as well as inferential data analysis procedures were employed for the qualitative and quantitative data respectively. Particularly, the qualitative data collected from FGD and interview were coded, reduced, categorized and presented thematically to explore the opinion and experience of research participants mainly on the status of SSs.

The quantitative data analyses were done using descriptive analysis, one sample t-test and MANOVA. MANOVA was used to examine the significant differences among participating HEIs on provision of SS and among groups of students with different types of disabilities (Gravetter & Wallnau, 2007). Of course, all inferential statistical techniques were employed with the assumptions of normality, linearity and homogeneity of variance set at an alpha level of statistical significance .05.

Specifically, in the process of quantitative analysis, first the raw data cleaning and coding were done before the actual analysis work then, descriptive statistics (mean, SD, Skewness, maximum and minimum value) and frequency distribution tables were computed to see the preliminary data analysis. Next, univariate and multivariate outliers' were examined with data plots and Mahalanibis Disatance test. The Mahalanibis Distance test detected only one case with extreme value (greater than the critical value) and it was eliminated to ensure the normality of data.

Results

Adequacy of Support Services

Descriptive analysis and one sample t-test was carried out to determine whether SS provision was adequate. The mean, standard deviation and T-value for each type of SSs and the composite scores are indicated in Table 3 below. As a result, all of the mean scores became below the expected mean (Mean, 3.07, 3.36, 3.01 & 3.18 for pedagogical, institutional, psychosocial and total SS respectively). Moreover, the means between the sample and the scales midpoint is statistically significant for all the three types of SSs independently and their composites, this indicate that the SS in the selected universities as perceived by students with disabilities is significantly lower than the expected level. Comparatively, the universities provided higher institutional support services which are even larger than that of the composite. Generally this result implies that the SSs to SWDs did not seem to be adequate.

Table 3: Test values for SSs and its sub scales as a function of mean differences (N=228)

One-Sample t Test				
Test Value = 4*				
Variables	M (SD)	t	Df	P
Psyc	3.07(1.06)	-11.97	227	.001
Ped	3.36(1.02)	-13.15	227	.001
Inst	3.01(1.24)	-9.37	227	.001
SSs_C	3.18(.98)	-12.46	227	.001

Note. Psyc-psychosocial support, Ped-pedagogical support, Inst-Institutional support, SS_C- support services Composite

*Test Value=4- four is the middle score in a Seven-Point Likert Type Scale

SSs Provisions as a Function of Types of Impairment

Multivariate Analysis of Variance (MANOVA) was conducted to assess if there were significant differences among the three types of impairment on a linear combination of pedagogical, institutional and psychosocial SS variables. Significant differences were found (Pillai's Trace =.16, F (223,448) =6.51, $p < .001$, Partial $\eta^2 = .080$). The partial η^2 of .08 implied that the difference on provision of SSs across students with different types of impairment was between medium and large (Cohen, 1988).

Table 4

Variable	Pillai's Trace	F	Df	Error df	Sig.	Partial η^2
Impairment types	.16	6.51	6.000	448.0	.001	.080

Results of MANOVA for students with the three impairment types

Further examination of the coefficients for the linear combinations of dependent variables differentiated with impairment types resulted from two discriminant functions. The first explained 76% of the variance, canonical $R^2 = .345$; whereas the second explained only 24%, canonical $R^2 = .2$. Generally, the discriminant functions significantly differentiated SSs per types of impairment ($\Lambda = .845$, $\chi^2(6) = 37.8$, $p < .001$). By removing the first function also indicated that the second function significantly differentiated students by impairment types ($\Lambda = .95$, $\chi^2(2) = 9.4$, $p = .009$).

Table 5*Descriptive discriminant function Analysis*

Variables	Function 1			Function 2		
	Raw	Stand	Stru	Raw	Stand	Stru
Institutional	-.14	-.14	.75	1.6	1.6	.65
Pedagogical	.92	.93	.97	-.84	-.84	.12
Psychosocial	.22	.26	.74	-.4	-.52	-.08

Moreover, the correlations between impairment type and the discriminant functions revealed that all the three SSs dimension loaded fairly highly on to the first function (range from .97 to .74/ $r=.97$, $r=.75$ & $r=.74$ for Ped, Inst and Psyc respectively). However, except institutional SS that loaded very similarly fair loading on both functions ($r=.75$ for the first and $r=.65$ for the second), the loading in the second function was below .3. An estimate by the group centroids for the three impairment types indicated that participants with hearing impairment reported the largest value ($r=.72$). The discriminant function plot further showed that the first function discriminated students with motor and visual impairment from students with hearing impairment and the second function differentiated students with visual impairment from the two types of impairment.

Table 6*Discriminant analysis of the two functions by AS variables*

Descriptive discriminant function				
Test of Function (s)	Eigenvalue	R_c^2	Λ	Sig.
1	.135	.12	.845	.001
2	.043	.04	.959	.009

SS experiences and opinion of SWDs

Pedagogical support services: informants generally agreed that pedagogical support was less recognized and poorly provided in both universities (UoG and AAU). Among all required pedagogical supports, students agreed that they were given priorities on departmental choices. Other pedagogical supports were not recognized in formal, detailed and practical ways. Most of the informants noted that considerations related to course inaccessibility, fulfilling course requirements, add and drop, instructional strategies, credit hour exemptions, class attendance, interpreter services (particularly for science college and engineering students), laboratory works and assessment approaches

(e.g., exam time and venues) were the most neglected support areas which both teachers and disability support officers failed to consider. However, few informants from AAU mentioned that they did not experience any interest with regard to course accessibility so far. Moreover, the practice of exam time extension was reported by only AAU law school informants with visual impairment.

Similarly, informants with visual impairment from social work department shared their experience on course accessibility based on their challenge during a registration of Statistics course. They said that their department forced them to register for the course by arguing that “exempting blind students from number course is the same as discriminating them from education” (Participant 6, SWVI, Gondar University). Among SWVI, one of the informants described the difficulties they faced during that time as follows:

...the interest to expect us to learn introduction to statistics (STAT) course was similar like “expecting a hen to fly like a bird because both have wings”. That was totally wrong and unacceptable. We (blind students in my faculty) accepted our limitations related to the disability. We couldn’t learn numbers though we had other abilities. It’s been how we came through the education systems until joining Gondar University. I did not know why the instructors made it something new. No other universities in the country also forced blind students to learn STAT course; most did give an equivalent course, but in our case indecision put us in unnecessary stress during that semester. (Informant 6, student with visual impairment, Gondar University)

In relation to courses with laboratory sessions one informant noted her experience as:

There were laboratory sessions which I couldn’t attend because of its nature, the equipment used and the set up. But none of my instructors were interested in making necessary arrangement and adjustment of materials and schedules. They kept silent and thought that they could not do any adjustment. They did not felt responsible to make decisions. I requested them to provide me with equivalent alternative tasks but no one could be able to decide. Finally, I got fail grade in that course. (Informant 4, Student with Motor Impairment, Gondar University)

Similarly, another informant among SWHI expressed her opinion on instructional approaches as:

...I had some teachers who used both interpreter and LCD as their instructional methods but most were not concerned with employing LCD presentation as supportive and key strategies to help us. I thought most teachers did not have

appropriate awareness about how to treat us and, they insulted and demoralized us. (Informant 5, Student with Hearing Impairment, Addis Ababa University)

Another informant further noted his experience related to assessment as follows:

...we were supposed to bring exam readers by our own effort...However; we usually faced difficulty to get volunteer readers particularly during final exam. As all students would have their own exams, there usually had clashes on the schedule and it became difficult for us to bring capable readers. The university also introduced computerized examination practice for SWVI but it was not widely exercised. I had reservation with that also because we were not equally capable in using computers. Hence I preferred the university to put it open both person and computer assisted examinations to be practiced so that students should make their choices. (Informant 4, student with visual impairment, Addis Ababa University)

The officers had also confirmed most of the points raised by SWDs. Most of the administrators were not aware of pedagogical support needs of SWDs. They noted that such supports shall be the sole responsibilities of teachers and department heads'. Moreover, they shared challenges they faced while trying to advocate for such supports from both teachers and the management due to lack of appropriate awareness and fear of taking responsibilities. For instance, one of the interviewees shared his experience as; “there were teachers who argued for irrelevance of providing assessment related considerations to SWDs by saying that having a disability doesn't mean they can't do. So they felt that SWDs had to compete equally without any special considerations” (Interviewee 2, support center Director, Bahir Dar University).

Institutional support services: Instructional and assistive materials such as digital recorders, stationary materials, white cane, slate & stylus as well as Braille papers were provided by both universities though separate reading room with computers, training on digital library and computers were specifically mentioned by AAU informants only. Of course, UoG provided free photocopy services, handouts (in soft copy) and laundry machine with operators. Except such provisions, informants from both universities rated their institutional support as insufficient and inaccessible. They complained about lack of so many instructional materials and administrative supports which should have been in place by the universities. For instance, they mentioned that the photocopy and laundry machines were not functional, there were no hearing aids and headphones (for students with partial hearing). Besides, UoG informants reported absence of Braille transcribed books and accessible computers. To further strengthen the findings the

One of the informants noted that, “...the number of computers in the center and our number did not match as a result, we had to wait too long queue to access computers and internet services” (participant 8, student with hearing impairment, Addis Ababa University). In describing his view on instructional materials provision, one of the informants reported:

...teachers gave us handouts at the same time with our peers without disability. I did not experience any special considerations or priority so far regarding format, timing or size of the learning materials. I believe that reading materials should be availed for us earlier than our non-disabled peers since we needed extra time for converting the print outs to audio by the help of readers and sound recorders. (Participant 1, student with visual impairment, Gondar University)

Similar reflections on institutional SS provisions were made by the following informant:

As per my experience at UoG, the supports from campus administrators and disability support center directors were very poor. We used to knock their doors and request basic support services but they always gave us promising words but none of them had been addressed so far. This year I totally gave up asking them and stopped participating in any activities organized and implemented by the support center. (Participant 1, student with Motor impairment, Gondar University)

Another informant stated his view as:

We all are being assigned here by our own choice. We choose AAU, because we have had a better academic competence and we were hoping to receive better education, responsive learning environment and to try to exceed our potential. I remember how I felt and considered myself as lucky while being assigned at AAU. However, shortly after my arrival, I regretted because I experienced the reverse here. Courses were delivered by junior instructors/ par timers who did not have equivalent excellence with the well-known professors in our respective fields of study, support services were poor and the awareness about SWDs is still very traditional. (Participant 2, student with visual impairment, Addis Ababa University)

Psychosocial support services: discussants from both universities reported that they received very low psychological support services. There were no psychosocial supports specifically designed for SWDs in the two universities, UoG and AAU. They declare that the relevance of psychological support was not recognized in their respective

universities and they believed that it was the most neglected aspect of their needs in the campus. Disability support centers usually tried to give life skills training but it was not enough. SWDs reported experienced psychosocial barriers in relation to teacher's attitude, lack of awareness and discouraging manner of communication, unsupportive learning environment and lack of self-development and stress management skills.

An informant from sport science department expressed lack of psychological supports as: "Instructors did not accept us and respect our educational right. There were some who even blame us for joining sport science department. Arguing that, we put ourselves in the wrong field that we did not deserve to learn and it was not meant for us" (Participant 8, student with hearing impairment, Addis Ababa University). Correspondingly, another discussant stated, "...the university did not provide those at least basic psychological support services such as guidance and counseling or short term training (e.g., life skills and self- advocacy)" (Participant 4, student with Motor impairment, Gondar University).

In terms of psychosocial SSs provisions, the results from officers generally revealed that they all did not provide formal and one to one guidance and counseling as well as other psychological support services specific to their SWDs. Except the commonly held life skills trainings and some capacity building activities conducted in collaboration with NGOs they also ensure that little has been done by their respective offices.

Discussion

The Adequacy of SSs

The study generally revealed that the sampled higher education institutions rendered inadequate SSs in all the three dimensions (pedagogical, psychosocial and institutional) both in terms of expected mean value and student expectations. Comparatively, the universities provided higher institutional support services which are even larger than that of the composite.

Attention to pedagogical and psychosocial dimensions. HEIs may assume that the presence of administrative support alone could help students overcome the real pedagogical barriers which they faced in their everyday learning experiences. However, effective pedagogical and psychosocial SS is the base to meaningful learning. The findings further revealed that Pedagogical support needs and requirements of SWDs were overlooked by the universities' managements. It was found that mainly the administrative aspects of pedagogical support needs - facilitating payment for readers

and interpreters were taken as all that should be done for equating the playing field to ensure meaningful academic experience for SWDs. Whereas, reconsidering instructional approaches, psychosocial supports, assessment formats, course adjustment and credit hour modification were not properly recognized and addressed.

Furthermore, the findings of the present study are consistent with previous studies, which indicated that rigid curriculum and unfair assessment procedures could be the core hindering factor to students' learning (Tirussew et al., 2014; Terzi, 2004; Yared, 2008). UDI clearly stipulated that HEIs should design and implement their programs to be used by broader range of learners, including those with identified disabilities (Block et al., 2006; Oliver, 2004; McGuire & Scott, 2006; Scott et al., 2001). Flexibility and multiple representations of courses with students' needs and abilities is an effective and cost wise approach to support. From these findings, it could be well recognized that universities should go beyond the usual service provision scheme and address the most relevant support needs of their SWDs in the design and implementation of their curriculum.

An important question associated with pedagogical support is equity. Ensuring equity in education demands institutions and instructors to set equal playing fields to all as per their needs and abilities. Otherwise, there is a possibility that it becomes unfair for the minorities. Fairness starts from understanding the difference among students. Sitting in exam with a reader, studying recorded notes, conducting oral presentations with interpreters and submitting assignments by a scribe would less likely be considered as similar ground with those students who read exam questions, responded answers and appeared in oral presentations by themselves. These differences were not the results of the direct effects of their disability rather they were the incompatibility between their learning modality and the system. As a result, the system including instructors, curriculum and support services officers should address the equity issue carefully before making the necessary adjustments. The claim of giving special favor could come after setting equal ground to all students. Otherwise, the arguments set by Sharp and Earle (2000), in relation to assessment related support could affect the validity and equity principles could not be justified.

Indeed, the rapid technological advancements both formally and informally made the education system dependent on the virtual world. Students without disabilities could easily integrate themselves and use varied opportunities to benefit from such technological developments. But this does not work fairly for those students with disabilities. This

could signify a possible confounds in availability and adequacy of ICT related SSs. That is, for one thing the technology may not be available. For the other, students may not prefer to use it in their academic experience. This is an important indicator that institutions should struggle to fill in gaps by utilizing the existing resources. Similarly previous studies reported that utilization of existing resources could be restricted by lack of required skills to manipulate technological devices and programs, quality of the service itself as well as restrictions related to format and service provision modalities (Asres, 2018; Chaputula & Mapulanga, 2016; Phukubje & Ngoepe, 2016).

It could be argued that the inadequacy of institutional SSs might be due to barriers related to students' actual competence to utilize those materials, teachers' use of different references (every time other than the one available to the students in the digital library), lack of coordination among actors and lack of computer skills. Moreover, support request modalities and administrators' competence were found to impose additional burden in its effective utilization. This further suggested that the universities were trying to fulfill commonly practiced and requested institutional support services to their SWDs. However, the practical contribution to students' learning may not be to the expected level as per the views of service recipients. In support of this finding, Tagayuna et al. (2005) revealed that trends in most HEIs showing SWDs' preferences to fulfill the usual, less expensive, practical and minimum requirements.

Provision of SSs Corresponding to the Type of Impairments

The provision of SSs across types of impairment indicated that the SSs were not evenly approached by students with different impairment types. Hence, SWMI were the least served groups; whereas, SWVI received higher institutional supports than students with the remaining types of impairments.

This finding is in line with previous studies that claim the relevance of considering specific needs of students both across type of impairment and within the same impairment types. Providing supports based on contextual and functional needs of individual impairments within universally designed system approaches was found efficient (Cunninghame et al., 2016; Fleischer et al., 2013; Fuller, 2008; Kurth & Mellard, 2006; Sheila & Sereta, 2004; Tinklin et al., 2004; UN, 2006).

One of the possible reasons for inaccessibility of SS across types of impairments at systems level related to the universities' design of services with an umbrella term 'SWDs' and the wrong assumption that all could benefit from prescribed supports

equally and similarly. For instance; provision of reading materials in either print or soft copy format didn't support the learning of SwVI and SwMI in similar way but availing it in both/ multiple formats could do better. This means that the available SSs were designed and provided as "one fits to all" model. This is the existing provision modality seemed be both against the current principles and international trends of universalizing HEIs to all as well as IE practices. These days, UDI recognizes accessibility of services to all students regardless of their personal attributes including disability type. Besides, the actual service provision gives much room to personal interpretation that could make things totally difficult for most institutions to ensure accessibility.

Because of these potential limitations, SWMI tended to be the least served groups, even if the visibility of the disability, the admission of students under diverse programs with a few number per streams and misunderstandings about their support needs could make them be the most needy ones. In line with this finding, previous studies confirmed that SWMI utilized their own informal support schemes as they usually received insufficient support than others from their universities (Okoye, 2010). This may explain why SWMI did not want to self-identify their disability and became actively involved in receiving the available SSs. Besides, fear of discrimination, lack of relevant self-advocacy skills and little satisfaction with their universities' service quality could possibly discourage them to stay aside. In support of this, previous studies witnessed that SWMI faced specific barriers related to negative attitude and lack of access to adapted technology in HE (Engelbrecht & De Beer, 2014; Gelbar et al., 2015).

One concern about the incongruence of findings related to SWHI was may be that of the sampling which included students only from AAU. Though, the sampling of the universities may affect the quantitative outcome, the triangulated data showed that SWHI were not better served groups. This further strengthened by a prior study on support provisions for SWHI in Ethiopian HEIs by Tirussew et al. (2014), stating that SWHI received an encouraging special support provisions still were low quality and scope; and they noted that among the three types, SWVI were served better.

The present study also revealed consistent findings with previous studies in relation to SWVI which indicated that they received a long list of special services while being comparatively better served groups than others (McConnell, 1981; Tirussew et al., 2014). Indeed, McConnell (1981) further noted that better support to SWVI were reported in terms of more material provisions though poor pedagogical support practice

was evident in the study. Moreover, the study elaborated the deficiency of existing SSs for SWVI as institutions usually provided old-fashioned computers, software and books with no alternative formats (e-text and Braille).

Conclusions and Recommendations

Conclusion

The current study examined adequacy of pedagogical, psychosocial and institutional SSs to HEI SWDs. The experience and opinion of students with VI, HI and MI were compared, analyzed and interpreted with instant literatures. The findings showed considerably new insights in the study of SS variables by combining distinct concepts (like pedagogical, psychosocial and institutional dimensions) to investigate the status of disability support in HEIs. Moreover, this research intended to contribute to the growing body of knowledge in the field of HE SWDs and in the identification of core support schemes that could assist them during their course of study. Thus, in light of the stated research questions and discussions of the results made above, the following conclusions are drawn.

Although academic learning is the core role of HEIs, the attention given by the universities' disability support centers to make key educational supports accessible for SWDs in close collaboration with its academic units is highly limited. Hence, universities did not design multiple methods of representation, expression and engagement for their SWDs. Moreover, the three SS variables (pedagogical, institutional and psychosocial) tended to be highly interrelated though the universities had varying degree of attention to each component. The pedagogical support was mainly disregarded by most of the universities. That is, the results revealed that pedagogical support did not seem to get more emphasis in the HEIs covered in this study. Lack of clear ownership between academic units and disability support centers was also identified. As per the perspectives of social-constructionists theory, universities have to deal with socio-cultural barriers evident in students' educational environment by creating equal educational opportunities for all students. Equality should focus on substitution of pedagogical approaches to SWDs; learning experiences and opportunities along with necessary positive differentiations, without changing the contents, its meaning and intended outcomes with the mainstream. Furthermore, accessibility of available SSs for Students with VI, HI and MI were found to be different. It could be concluded that the support to SWVI largely relied on material and administrative provisions, while,

SWHI received better pedagogical and psychosocial supports like their institutional support schemes. Yet, this may be related to the limited fields of study in which SWHI were enrolled, that is, they were small in number and found in AAU only. Yet SWMI were less recognized and had limitations in all aspects of SSs. The universities tended to serve students who identified themselves for the support centers preferably in group and found in similar fields of study or campus. Certainly, the universities revealed lower capacity in providing university wide support services. The results further showed that there was still a long way to go to addressing the accessibility of available and required supports especially to SWMI.

Although the present study attempted to integrate pertinent support service dimensions together, comparing the supports across disability types, using mixed methods research design as well as multiple data collection instruments (questionnaire, FGD and interview) and data analysis techniques (thematic, descriptive and inferential), some limitations are observed. First, though academic executive directors were supposed to participate in the study, their perception on available supports was not included. Second, data regarding SWHI were collected only from AAU, due to the insignificant number of SWHI in the other universities which participated in the study.

On the basis of the conclusions drawn, the following suggestions are forwarded:

- As a foundation to knowledge, universities are expected to play a leading role and frame the support they provide to SWDs based on evidence, beneficiaries' voice, legislative provisions and best experiences from multiple dimensions. Hence, HEIs, Special needs Education professionals and union of SWDs should create advocacy platforms, organize and utilize universities' potential and develop national policy and strategic frameworks that will guide support provisions to SWDs at HE in the country.
- Revisiting university academic programs' capacity to accommodate diversity by utilizing the principles of Universal Design for Instruction is demanded. Hence, curriculum developers, HEI administrators and special needs education professionals should devise mechanisms that ensure multiple representations, participation and achievement of students with diverse characteristics.
- As the current focus of Ethiopian HEIs have shifted towards improving quality, their respective SS centers should design strategic directions in structure, line of

communication, responsibility and accountabilities to ensure fair representation and participation of students with disabilities in all aspects of their academic endeavors.

- Future research shall investigate the contribution of each SS dimensions independently and in-depth by incorporating the perspectives of faculty and collaborative practices in addition to students and officers' opinion.

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