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Research Articles

Enhancing Academic Adjustment, Motivation and Life Satisfaction of Female Preparatory School Students Using Acceptance and Commitment Therapy

Moges Ayele Asale (PhD)[a1], Shimeles Gebeyehu Ayalew[b], Belay Tefera Kibret (PhD)

[a] Assistant Prof., School of Psychology, College of Education and Behavioral Studies, AAU
[b] Behavior Change Project Coordinator, DKT Ethiopia
[c] Professor, School of Psychology, College of Education and Behavioral Studies, AAU

Abstract

Academic motivation, adjustment, and life satisfaction are among the most important factors that have a great impact on students' success at school and well-being in life which are highly determined by psychological flexibility. Acceptance and commitment therapy (ACT), which is a mindfulness-based therapy, is believed to impact students' psychological flexibility. The aim of this study was to investigate the effectiveness of ACT group intervention on academic achievement motivation, adjustment, and life satisfaction of students. A program that consisted of 10 weekly sessions, each of which took two hours in duration was implemented for 45 grade 11 female students at Bole Preparatory School following The Melbourne Clinic ACT group treatment procedure. Participants were recruited based on their response to the call for participation, assessment through intake interview and confirmed availability to attend the intervention sessions. The participants were randomly assigned into two groups: intervention (treatment) group (ACT) and the waitlist (control) group (WLG). Both baseline (pre-test) and end line (post-test) were conducted. Adjustment Inventory for School Students (AISS), Deo and Mohan Achievement Motivation (DMAM), Acceptance and Action Questionnaire (AAQ II), Cognitive Fusion Questionnaire (CFQ), The Mindful Attention and Awareness Scale (MAAS), Valued Living Questionnaire (VLQ) and Satisfaction with Life as a Whole and Personal Wellbeing Index Scale (PWI) were used to measure psychological flexibility academic adjustment, academic motivation, satisfaction with life, and personal wellbeing. A repeated measure ANOVA model was used to test the hypothesis. The results showed that students in the ACT group reported greater academic motivation, adjustments, life satisfaction and psychological flexibility than those in the WLG after receiving the 10-weeks long standard ACT group intervention. Based on the findings of this study, it can be concluded that ACT group intervention can help to boost achievement motivation, adjustment, and satisfaction in life among female high school students.

Introduction

Achievement motivation and School adjustment are among the most important factors that have great impact on students' success at school and beyond. Motivation and adjustment increase productivity at school and well-being in life. The lack of them, on the other hand, leads to frustration and disengagement in academic activities. Research tells us that the lack of academic motivation may arise from poor self-image and efficacy, lack of belief on the

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[1]**CONTACT** Moges Ayele Asale, email: mogesay@yahoo.co.uk

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value of effort, missing values in the academic activities and lack of inspiring qualities in the curricular activities (Legault, Green-Demers & Pelletier, 2006). In addition to lack of motivation, students face many changes and challenges in and outside school. These issues call for an adjustment. As Sinha and Singha (1984) state, students need emotional (personal), social and educational adjustments to succeed at School and in life.

Psychological flexibility is one of the most important approaches to dealing with students' motivation (achievement emotion) and school adjustment (Enayati, Dousti & Mirzaian, 2018). Psychological flexibility, which is the center of Acceptance and Commitment Therapy (ACT), is believed to help students to be connected to the present moment and to manage emotions and actions regardless of the unpleasant thoughts or feelings they might experience. ACT is also believed to help students act in harmony with their values and life goals.

At a broad level, ACT is a mindfulness, acceptance and values-based psychotherapy that is grounded in behavioral and cognitive theory (Hayes, Masuda & DeMey, 2003). It targets psychological problems with the general goal of increasing psychological flexibility – the ability to contact the present moment more fully as a conscious human being, and to change or persevere in behavior. This leads to valued ends. In terms of intervention, the two major goals of ACT are to foster (a) acceptance of problematic, unhelpful thoughts and feelings that cannot be controlled, and (b) commitment and action toward living a life that is consistent with one's values. Psychological flexibility is established through six core processes named ACT processes. These processes include Acceptance, Cognitive defusion, Being present, Self as Context, Values and Committed action. Rather than having to eliminate difficult private experiences from occurring at all, ACT teaches clients and therapists how to alter the way they function mentally. This empowering message has been shown to help clients cope with a wide variety of clinical problems.

In psychological flexibility, it is assumed that students can perform much better and ensure their well-being when they deliberately choose to perform in accordance with their own goals and values whatever the situation they are in (Asikainen, Ailikari & Mattson 2017). So, when the basic components/processes of psychological flexibility are addressed, the personal well-being of the student will be improved. This in turn boosts the achievement motivation and school adjustment (emotional, social, and educational) of the student.

Even though there is a scarcity of empirical evidence about ACT and its impact on female students especially those in high school, there are some studies that indicate the effectiveness of ACT in school settings. The studies have shown that ACT helps students to build variety of skills such as being aware of their internal experiences, choosing actions proactively instead of being reactive and spontaneous, looking past judgments and criticism regarding what they feel or think, constructing or reconstructing their values and acting in agreement with them (Paliliunas, Belisle & Dixon, 2018; Enayati et al., 2018). In a study conducted on ACT as a school-based group intervention for students, the experiential avoidance and hyperactivity or inattention of the students were decreased after receiving universal ACT intervention (Takahashia, Ishizub, Matsubaraa, Ohtsukic & Shimoda, 2020). ACT has also been found to reduce students' mental health issues depression, anger, stress, anxiety, shame and exhaustion in addition to improving their psychological well-being (Hekmati, Ranjbar, Eskin, Drake & Jobson, 2021; Gendron, Kouremenou & Rusu, 2016; Gregoire, Lachance, Bouffard & Dionne, 2017). The study conducted by Enayati, et al.

(2018) indicated that ACT had improved the emotion regulation skill of female students and changed the attitude they have about themselves. They have also indicated that the students re-examined and articulated their values and goals towards which they deployed committed actions. Besides that, the female students' quality of life had been significantly improved after receiving ACT intervention.

Studies have indicated that ACT intervention was found to provide students capabilities to adjust combat distresses in their post-secondary study abroad (Muto, Hayes & Jeffcoat, 2011) and reduce social anxiety in middle school students (Rostami, Veisi, Dehkordi & Alkasir, 2014). Azadeh, Kazemi-Zahremi, and Besharat (2016) conducted a research on female students with social anxiety disorder. The research showed that female students' interpersonal problem was reduced as their psychological flexibility increase after ACT intervention. ACT has also been found to promote academic engagement, increase performance, and better adjustment in schools (Asikainen et al., 2017; Gregoire et al., 2017; Paliliunas et al., 2018). Academic procrastination was significantly reduced and committed action was significantly improved among students who received ACT than those in the control group (Gadnon, Dionne, Raymond & Gregore, 2019). In addition, Livheim, et al. (2014) found that mental health issues like high stress and depressive symptoms were improved in the ACT group students. Their mindfulness had also been increased among the students.

Ethiopian Demographic and Health Survey (CSA, 2016) shows that men are better educated than women in Ethiopia. According to the report, about half of women (48%) and 28% of men aged 15-49 have no formal education. Even though the expansion of higher learning institutes in Ethiopia gave more access to female students, the overall enrolment is still 34.14% at the undergraduate level (MOE 2017; Bishaw & Melesse, 2017). Data clearly show the need for strong support for female students at high and preparatory schools so that they can pursue to higher education.

Studies conducted at primary and secondary schools in Addis Ababa (Kolfe Keranio, Kirkos, and Akaki Kaliti sub cities) and other parts of Ethiopia, pointed out family, student and school related factors that highly affected students' motivation and achievement at school (Abebe, 2017; Debalke, 2018; Moges & Fyssa, 2020). Even though empirical research specific to Bole Preparatory school on this issue couldn't be found, studies in similar schools in Addis Ababa showed that such problems exist among female students. Ethiopian Education Development Roadmap (2018-30) states that in most of the secondary school students' engagement, which was measured by motivation to learn, enthusiasm in academic activities like reading and attendance, energy, and perseverance was found to be very low.

Moreover, the investigators' personal communication with the students and officials including school counselors indicated the challenges female students face at the school. During the academic year when the investigation was conducted (2018/19), stress, anxiety, depression, finacial and economic problem, educational and acadamic challeneges, discipline problem, lack of goals in life and addiction were mentioned by the school counselors as common counseling issues for individual counseling needs. Lack of motivation, poor acadamic achievemnt, stress due to economic and financial challenege, unfavorable school environment, teachers behavior and lack of discpline among their fellow students were mentioned as common counseling issues by students themseles (personal communication).

These factors require adjustment which is expressed by psychological flexibility or acceptance and goal-oriented commitment.

To achieve this, well-established and structured counseling services delivered for the students has a great impact. In countries like Ethiopia where there is poor school counseling, identifying a better counseling therapy will have a great impact to satisfy the needs of boosting academic adjustment, motivation, and life satisfaction among students.

As stated above, academic motivation and adjustment are among the most important factors that have great impact on students' success at school and well-being in life. Motivation and adjustment increase productivity at school and well-being in life. The lack of them, on the other hand, leads to frustration and disengagement in academic activities. Psychological flexibility helps to dealing with students' motivation (achievement emotion) and adjustment (Enayati, et al., 2018). Psychological flexibility is believed to help students to be connected to the present moment and to manage emotions and actions regardless of the unpleasant thoughts or feelings they might experience. It is also believed to help students act in harmony with their values and life goals.

In psychological flexibility, it is assumed that students can perform much better and ensure their well-being when they deliberately choose to perform in accordance with their own goals and values whatever the situation is (Asikainen et al., 2017). So, when the basic components of psychological flexibility (acceptance, cognitive defusion, value, goals, mindfulness and committed action) are addressed, the personal well-being of the student will be improved. This in turn boosts the academic motivation and adjustment (emotional, social, and educational) of the student.

The Present Study

This study aimed to explore the effectiveness of the ACT on outcomes (school adjustment, achievement motivation, and life satisfaction) of female students through enhancing therapeutic processes (acceptance, cognitive diffusion, mindfulness, committed action and values). To the best of our knowledge, no study has been conducted (published) regarding effectiveness of ACT to enhance academic adjustment, motivation, and life satisfaction of students in Ethiopia. Besides, even though there is much research conducted on the effectiveness of ACT on different mental health issues of students, there is a shortage of evidence on its effectiveness in academic adjustment, motivation and life satisfaction of students from various parts of the world. Conducting this research is believed to help us verify whether the effectiveness that has been published in other parts of the world can be repeated here in our context. It helps us also to see the potential utility of the ACT model in our school system and culture. Testing it in our culture will also help us to frame specific expectations and customs within the ACT experience considering our concept of mental health and healing. It will help us improve school counseling through the application of empirically proven therapeutic model.

It is hypothesized that there will be a significant improvement in ACT group participants' school adjustment, achievement motivation, and life satisfaction from baseline to post-treatment following a 10-weeks long ACT treatment in a group setting.

Methods

Design

The study was Randomized Controlled Trial research. It was designed to assess the effectiveness of ACT in enhancing school adjustment and achievement motivation among female students. It had also assessed the efficacy of ACT in improving quality of life and recognition of positive feelings towards self and the environment. This study was conducted at the guidance and counseling center of Bole Preparatory School in Addis Ababa.

Participants and Screening Measures

The subjects registered to participate in the study were 70 Grade 11 female students at Bole Preparatory School. Mini-Media and classroom advertisements and flyers describing the free psycho-educational intervention were released and distributed calling for volunteer participants. A poster advertisement was also posted on the school's notice boards inviting volunteers. Those students who were attending classes at 11th grade by the time the research was conducted, were able to attend the scheduled psycho-educational workshops, took the intake assessment through telephone and had at least scored less than 3.0 on the Ethiopian General Secondary Education Certificate Examination (EGSECE) were selected eligible for the intervention. The intake assessment contained questions that ask students' personal view of their level of motivation, adjustment, and life satisfaction. Those who felt less motivated, adjusted and satisfied and met the other criterions were shortlisted for the research. The subjects were asked for their informed consent to participate in the study.

Instruments/Measures

The following self-report questionnaires were completed by participants to measure ACT process measures (acceptance, experiential avoidance, cognitive fusion, mindfulness, and valued living) and outcome measures (school adjustment, achievement motivation, satisfaction with life, and personal wellbeing).

School adjustment was measured by Adjustment Inventory for School Students (AISS). AISS is a tool developed by Sinha and Singh (1984). It consists of 60 items. These items are equally distributed in each area of adjustment (emotional, social, and educational). The responses are in 'yes' and 'no' form, and scored as 0 or 1. The minimum score is 0 while the maximum score being 60. High scores on AISS imply poor levels of adjustment whereas low scores indicate good adjustment.

Achievement motivation was measured by Deo and Mohan Achievement Motivation (DMAM). DMAM was constructed by Pratibha Deo and Asha Mohan in 1985 (Deo & Mohan, 1985). The scale consists of 50 items out of which 37 items are positive while 13 are negative. Participants are expected to rate the frequency of the statements which indicates their feelings on a five-point scale.

Life satisfaction was measured by Satisfaction with Life as a Whole and Personal Wellbeing Index Scale (PWI; International Wellbeing Group, 2006). PWI is a two-part measure of quality of life. The first part is comprised of a single-item measure of overall life satisfaction which asks the individual to rate the extent to which they are satisfied with their life as a whole, based on their life and personal circumstances. The second part of the

measure is the PWI that contains 8 items of satisfaction, each one corresponding to quality-of-life domains including standard of living, health, achieving in life, relationships, safety, community-connectedness, future security, and spirituality/religion.

Acceptance and committed action were measured by Acceptance and Action Questionnaire-II (AAQ-II). AAQ-II is a 7-item, self-report measure of experiential avoidance, or the tendency to avoid negative private events such as thoughts, feelings, or bodily sensations (Bond et al., 2011). The participants were instructed to rate how true each of the 10 statements was for them using a 7-point Likert scale.

Cognitive fusion was measured by Cognitive Fusion Questionnaire (CFQ). CFQ is a 13-item self-report questionnaire designed to measure cognitive fusion and defusion as a general process (Gillanders, 2013). Participants rated how true each statement was for them on a 7-point Likert scale. Higher scores reflect higher levels of cognitive fusion.

Mindfulness was measured by The Mindful Attention and Awareness Scale (MAAS). MASS is a 15-item questionnaire that measures dispositional mindfulness (Brown & Ray, 2003). The participants were asked to report how often he/she believed he/she had experienced by rating each item on a 6-point Likert scale. Higher total scores reflect higher dispositional mindfulness.

Values were measured by Valued Living Questionnaire (VLQ). VLQ is a 2-part self-report questionnaire, designed to measure valued living, defined as "the extent to which an individual contact his or her chosen values in everyday life" (Wilson, Sandoz, Kitchens & Roberts, 2010). It consists of a 10-point Likert scale where participants rate the importance of 10 domains of living. A Valued Living composite score represents how consistent the individual has been in living in accord with their important values across all life domains, with higher scores indicating higher values consistency.

The Cronbach's alpha coefficient of all the instruments was validated before they were applied in this study (see Table 1).

Assessment Procedure

At baseline, all individuals who were registered and screened to participate in the ACT group program (N=70) were called for an orientation session out of which only 56 attended. After the orientation, they were provided with an envelope that contained a consent form and the questionnaire package at the first group session. Participants were asked to complete the consent form and questionnaire package that contained 7 questionnaires and deliver it during the first group session. The questionnaire package was taken participants approximately 60 minutes on average to complete. In addition, a Demographic Questionnaire was administered to gather factual data about each participant. Then, of the consenting clients 49 of them completed the pre-intervention questionnaires and were randomly assigned based on the initial two digits of their code to participate in one of the two groups: treatment group or waiting list (control) group (29 to intervention group; 20 to wait-list group). After that, all study participants received treatment with ACT free of charge in two rounds. The treatment group received ACT first and the waiting list group received ACT later. Finally, participants completed the post-treatment questionnaire package immediately at the end of the final group session. Forty-five (45) completed the treatment and took the post-treatment questionnaire.

Table 1

Reliability of the Instruments as Measured in Cronbach's Alpha Coefficient

Instrument/ Tool	Cronbach's alpha coefficient (α) from literatures	Cronbach's alpha coefficient (α) in this study
Acceptance and Action Questionnaire (AAQ- II)	α = 0.93 (Christie et al., 2013)	0.90
Cognitive Fusion Questionnaire (CFQ-13)	α = 0.85; 0.91, 0.95 (Christie et al., 2013; Dionne, et al., 2016; Ruiz, Suarez-Falcon, Hernandez & Gillanders, 2016).	0.86
Valued Living Questionnaire (VLQ)	α = 0.72 – 0.79 (Wilson, Sandoz, Kitchens & Roberts, 2010; Cotter, 2011).	0.80
Mindful Attention and Awareness Scale (MAAS)	α = 0.82; 0.92 (Brown, 2003; Christie et al., 2013)	0.89
Satisfaction with Life as a Whole and Personal Well-being Index Scale (PWI)	α = 0.70; 0.85 (Lau & Cummins, 2005; Beuningen & Jonge, 2011)	0.83
Emotional Adjustment (AISS_E)	α = 0.96 (Sinha & Singha, 1984).	0.92
Social Adjustment (AISS_ S)	α = 0.90 (Sinha & Singha, 1984).	0.88
Educational Adjustment (AISS_ Edu.)	α = 0.93 (Sinha & Singha, 1984).	0.90
Total Adjustment (AISS_ Total)	α = 0.93 (Sinha & Singha, 1984).	0.87
Deo and Mohan Achievement Motivation (DAAM)	α = 0.78 (Deo & Mohan, 1985; Farheen, 2018)	0.80

Treatment Procedure

The books entitled *Acceptance and commitment therapy: An experiential approach to behavior change* (Hayes, Strosahl & Wilson, 1999) and *ACT for Adolescents: Treating Teens and Adolescents in Individual and Group Therapy* (Turrell & Bell, 2016) were used as manuals for the treatment. It was applied following The Melbourne Clinic ACT group treatment procedure (Table 2).

Table 2

Treatment Sessions with Core Activities Done in Each Session

Session	Major Activity
1	Introduction to ACT, Group Therapy, Assessment and Creative Hopelessness
2	ACT Foundations, achievement motivation, school adjustment and life satisfaction
3	Introduction to Acceptance
4	Introduction to Values
5	Introduction to Cognitive Fusion and Defusion
6	Values and Committed Action
7	Acceptance and Values Revisited and Introduction to the Observing Self

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Session	Major Activity
8	Choice Points and Values in the Real World
9	The Observing Self and Maintaining Committed Action
10	Revision and Consolidation of ACT Principles

The ACT group intervention was delivered by the researchers in collaboration with two school counselors at Bole Preparatory School Guidance and Counseling Center. The program consisted of 10 weekly sessions, each of which took two hours in duration. Consistent with the ACT transdiagnostic theoretical model, the treatment program was not designed to target a specific psychological disorder or disorders, rather it was designed for students with challenges in academic adjustment and motivation and a range of mental health problems. The focus of the intervention was on assisting participants in practicing acceptance of unhelpful experiences, thoughts, and urges and promoting engagement in meaningful actions toward their valued life directions. The same treatment was delivered for the waiting list group after that which was delivered for treatment group was completed and data was collected from participants in both groups for the second time.

Data Analysis Procedures

For the data analysis, SPSS was used. All the data collected at the baseline (pre-test) and end line (post-test) were properly scored, codded, and entered in the SPSS. The hypothesis was tested using a repeated measure ANOVA model in which baseline was taken before intervention and a post intervention assessment was done both for the intervention (treatment) group (ACT) and the waitlist (control) group (WLG) participants. In the preliminary analysis, the normality of the data was tested using Shapiro-Wilk tests and the homogeneity of variances was checked with Box's M test. The presence of outliers was also checked. Group equivalence at baseline was assessed for all measures (both process and Outcome) using Univariate analysis of Variance. Results showed no main effects of ACT vs WLG on any of the measures. So, after checking that the ACT and WLG were more or less similar in demography and baseline measures, then repeated measure ANOVA was conducted to examine the effect of the intervention on each process and outcome measure after the intervention was completed for the ACT group.

Results

Socio-demographic Data

A total of forty-five (45) students participated in the research. All were female and grade eleven (11) students at Bole Preparatory school. Table 3 and Table 4 show some socio-demographic features of the participants. As it can be seen from the table the mean age of the participants was 16.84 which lies in the traditional age of grade eleven students (16-18 years). The mean EGSLCE result of the participants was 2.71 which fits with the inclusion criteria (3.00 and below). As the intervention was started in the second semester of the academic year, their first semester results were also recorded. As we can see in Table 3, the average result was 64.13 that was an average result. These results were recorded as they might be causes and/or results of academic motivation.

Table 3

Participants Characteristics: Age, EGSLCE Result and Grade 11 First Semester Results.

Intervention Group and Waiting List Group		Age	EGSLCE[*] Result	Grade 11 first semester Average Result
WLG	Mean	16.53	2.73	62.04
	N	17	17	17
	SD	.72	.17	5.09
ACT Group	Mean	17.04	2.69	65.40
	N	28	28	28
	SD	1.26	.18	4.68
Total	Mean	16.84	2.71	64.13
	N	45	45	45
	SD	1.11	.18	5.05

Note. * EGSLCE: Ethiopian General School Leaving Certificate Examination

The participants' living condition and their family's average monthly income was also assessed. As it can be seen from Table 4, almost all students live with their family, and they are from an average income family (classified based on the new income tax rating of the Ethiopian Revenue and Customs Authority). These components were captured as they might be sources of distress, demand adjustment, and become an issue in life satisfaction.

Table 4

Participants Characteristics: Monthly Income and Living Condition.

Group	Monthly average income of the family			Currently Living with	
	Below Average Income	Average Income	Above Average Income	Living with Family	Living alone
WLG	3	9	5	17	0
ACT Group	7	12	9	27	1
Total	10	21	14	44	1

Preliminary Analysis/ Baseline Comparison

The tests for checking normality of the data (Shapiro-Wilk), the homogeneity of variances (Box's M) and the presence of outliers (Univariate Z Score) indicated that there was no statistical assumption violated and outliers detected. A Shapiro-Wilk's test (p>0.05) had showed that the data were approximately normally distributed. So, both the WLG and ACT are comparable with respect to age (p=0.139), place where majority of life spent (p=0.423), Ethiopian General School Leaving Certificate Examination (EGSLCE) result (p=0.497), Grade 11 first semester average result (p=0.290), monthly average income of the family (p=0.840) and whom they were living with (p=0.442).

Group equivalence at baseline was assessed for all measures (both process and Outcome) using Univariate analysis of Variance. Results showed no main effects of ACT Group versus WLG on any of the measures. Table 5 shows the Levene statistics of all

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measures. The comparison of baseline scores of ACT and WLG conditions found no significant difference for all measures except PWI which was found Skewed (Levene statistics found to be p <0.05). For this measure, the data set was transformed using Log10 arithmetic and was adjusted (p=0.443).

Post-Treatment Data/ Process and Outcome Measures

After checking that the ACT Group and WLG were similar in demography and baseline measures, then ANOVA was conducted to examine the effect of the intervention on each process and outcome measure after the intervention was completed for the ACT Group.

Table 5

P-Values of Process and Outcome Measures.

Measures	Levene Statistics	
Process Measures	p value	Transformed p value
Psychological Flexibility		
Acceptance and Action (AAQ- II)	0.849	
Valued Living (VLQ)	0.441	
Cognitive Fusion (CFQ 13)	0.384	
Mindfulness Attention and awareness (MAAS)	0.080	
Outcome Measures		
Life Satisfaction		
Satisfaction with Life and Personal Well-being (PWI)	0.001	0.443
School Adjustment		
Emotional Adjustment (AISS_E)	0.332	
Social Adjustment (AISS_ S)	0.395	
Educational Adjustment (AISS_ Edu.)	0.102	
Total Adjustment (AISS_ Total)	0.636	
Achievement Motivation		
Deo and Mohan Achievement Motivation (DMAM)	0.726	

Note. p value greater than 0.05 shows that the data is normal.

Intervention Effect Analysis

The repeated measure univariate ANOVA results for psychological flexibility, academic motivation, adjustment, and life satisfaction have been merged and presented in one table (Table 6) and tests of between-subjects effects have been summarized in another table *(*Table 7).

After delivering the 10-weeks long standard ACT group intervention, the psychological flexibility process measure results of those in the ACT group had been improved significantly as measured by acceptance and commitment, valued living, and cognitive fusion questionnaire [AAQ II- $F_{(1,43)}$ =27, p=0.000, η^2= 0.39; VLQ- $F_{(1,43)}$ =9.8, p=0.003, η^2=0.19; CFQ- $F_{(1,43)}$ =13.9, p=0.001, η^2=0.24). However, there was no significant difference observed in mindful and awareness measure/MAAS ($F_{(1, 43)}$ =2.1, p=0.159, η^2=0.05).

The cut-off point for AAQ II is 24-28 which indicates average psychological inflexibility or distress. Any result above that point shows greater level of distress or lower level of flexibility and any result below those show lower distress and higher psychological flexibility. As it is shown in Table 5, the mean score in the post treatment was 16.89 which tells that there was a higher psychological flexibility in the ACT group.

The mean score for the CFQ 13 measure after intervention had become 40.00 for the ACT while 51.00 for the WLG (cut off point being 44-45). This shows that participants in the ACT group had a higher level of cognitive defusion after the intervention while those in the WLG still had higher level of cognitive fusion.

VLQ results are considered average when the scores are 84-85. A result above this cut-off point indicates higher level of valued living. In this study, the mean scores in the post test were found to be 90.11 and 84.00 for participants in ACT and WLG respectively. Though a statistical significance was observed between the two groups, there was an improvement in VLQ results in both ACT and WLG.

As stated above, the MAAS results are not significant between participants in ACT and WLG (smaller F-value (2.1, F-critical was 4.07) and higher p value (0.159) were obtained). The cut-off point for MAAS is 50-55 and any score above that indicates higher mindful, attention, and awareness.

Table 6

Effect of ACT Intervention on Student's Psychological Flexibility, Academic Motivation, Adjustment and Life satisfaction

Measures	p-value (α)		ACT Intervention		WLG	
			Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)
	Pre	Post				
Psychological Flexibility						
Acceptance and Action (AAQ- II)	0.561	0.000	25.68 (8.36)	16.89 (6.43)	27.18 (8.23)	27.59 (6.85)
Valued Living (VLQ)	0.307	0.003	69.11 (27.24)	90.11 (6.34)	76.47 (6.91)	84.00 (6.36)
Cognitive Fusion (CFQ 13)	0.222	0.001	50.89 (8.85)	40.00 (8.34)	54.47 (10.27)	51.00 (11.42)
Mindfulness Attention and awareness (MAAS)	0.095	0.159	45.71 (11.43)	61.25 (9.61)	50.76 (5.31)	57.00 (9.71)
Life Satisfaction						
Satisfaction with Life and Personal Well-being (PWI)	0.017	0.000	63.75 (10.83)	79.18 (6.57)	55.18 (11.80)	62.47 (17.62)
Adjustment & Motivation						

Measures	p-value (α)		ACT Intervention		WLG	
	Pre	Post	Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)
Emotional Adjustment (AISS_E)	0.304	0.000	12.82 (2.75)	4.07 (2.94)	11.88 (3.22)	9.94 (3.34)
Social Adjustment (AISS_ S)	0.748	0.000	4.39 (0.60)	3.86 (2.24)	4.35 (0.79)	10.12 (3.86)
Educational Adjustment (AISS_ Edu.)	0.161	0.000	9.71 (1.78)	4.04 (2.59)	10.76 (3.17)	10.00 (4.24)
Total Adjustment (AISS_ Total)	0.834	0.000	32.11 (3.99)	2.21 (0.57)	32.47 (7.58)	4.24 (0.75)
Deo and Mohan Achievement Motivation (DMAM)	0.852	0.000	2.17 (1.09)	62.36 (25.76)	2.11 (0.99)	34.11 (20.74)

Satisfaction with life as a whole and personal wellbeing was measured using PWI. The result showed a significant change in life satisfaction between the two groups [F (1, 43) =20.7, p =0.000, η^2=0.33). The cut-off value set by the PWI; International Wellbeing Group (2006) is 70-80. Any value above that indicates higher personal wellbeing and life satisfaction. The means in the post test were 79.18 and 62.47 with a standard deviation of 17.62 and 6.57 for the ACT and WLG respectively.

Table 7

Tests of Between-Subjects Effects: Treatment with ACT being the Independent Variable.

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared (η^2)	Noncent. Parameter	Observed Power[a]
AAQ-II	1210.004	1	1210.004	27.901	.000	.394	27.901	.999
CFQ 13	1279.911	1	1279.911	13.884	.001	.244	13.884	.954
VLQ	394.521	1	394.521	9.791	.003	.185	9.791	.864
MAAS	191.061	1	191.061	2.051	.159	.046	2.051	.288
PWI	2952.858	1	2952.858	20.705	.000	.325	20.705	.994
AISS-Emo	369.843	1	369.843	38.164	.000	.476	38.164	1.000
AISS-Soc	414.585	1	414.585	47.769	.000	.526	47.769	1.000
AISS-Edu	334.951	1	334.951	30.615	.000	.422	30.615	1.000
AISS_ Total	42.994	1	42.994	102.495	.000	.709	102.495	1.000
DMAM	8440.096	1	8440.096	14.631	.000	.254	14.631	.962

Academic adjustment was measured using AISS tool. It measures emotional, social and educational adjustments separately and overall adjustment as a sum of all the three. Compared to the WLG, participants in the ACT group had shown a significant improvement

in their emotional, social, educational and overall adjustments after the intervention with significance value of F (1, 43) =38.2, p = 0.000, η^2=0.48; F (1, 43) = 48.8, p = 0.000, η^2=0.53; F (1, 43) =30.6, p = 0.000, η^2=0.42 and F (1, 43) =38.2, p = 0.000, η^2=0.71 respectively.

The achievement motivation of the students had also improved after receiving ACT intervention. A highly significant difference was observed between the ACT and WLG [F (1.43) =14.6, p =0.000, η^2=0.25].

Discussion

This study examined the effect of a 10-weeks long ACT group intervention on therapeutic processes (acceptance, cognitive defusion, mindfulness, committed action and valued living) and outcomes (academic adjustment, motivation, and life satisfaction) of female preparatory school students. It was hypothesized that there will be a significant improvement in academic motivation, adjustment, life satisfaction and all psychological flexibility processes among students after receiving ACT group intervention. All those hypothesized changes were observed among the ACT participants compared to the WLG participants except for the mindfulness measure. Both groups showed an increase in the MAAS results and there was a difference between ACT and WLG, but it was not statistically significant.

Effect of ACT on Psychological Flexibility

The findings of this study indicate that the participants in the ACT group scored lower psychological inflexibility/ higher psychological flexibility after receiving ACT intervention. The effect size is large in most of the measures like acceptance and action (η^2= 0.390), valued living (η^2=0.19) and cognitive defusion (η^2=0.24) as presented in Table 6. The changes observed in the ACT processes had a great implication for students' success and wellbeing. Empirical evidences show that ACT interventions had a great impact in reducing the level of stress and promoting well-being at work and school (Pull, 2009; Wersebe, Lieb, Meyer, Hofer & Gloster, 2018), promoting the mental health and increasing school engagement of students (Gregoire, Lachance, Bouffard & Dionne, 2018), reducing procrastination among students and influencing factors affecting depression, stress, and burnout in school settings (Keshavarz & Yousefi, 2019).

In this study a significant difference was not observed in mindfulness, awareness and attention measures among the two groups. Though the result shows that some improvements were seen in mindfulness, awareness and attention after treatment, it was underpowered with regards to showing a significant difference between ACT and WLG (Observed power <50%, Table 6). However, in a study conducted by Takahashia, et al. (2020) a significant reduction in hyperactivity or inattention was observed after intervention with universal ACT among students. Many other research findings had also supported that (Edwards, et al., 2019; Keshavarz & Yousefi, 2019; Katajavuori, Vehkalahti & Asikainen, 2021).

Effect of ACT on Academic Motivation

In this study, achievement motivation was boosted among students after intervention with ACT. This will have a great impact in the success of the students. Achievement

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motivation of students is the 21st century society's matter of great concern (Esteki, Vatan, Panah & Kouchakentezar, 2020). These days, the motivation for learning has become a top issue in education, and its absence represents a decrease of quality in learning. It is believed that unless the students have high level of achievement motivation it will be difficult on the part of the society to develop. As Legault et al. (2006) mentions, lack of motivation is one of the major academic challenges that is plaguing today's adolescents and youth at schools. They said, "Year after year, for reasons yet to be understood, numerous high school students find themselves in a state in which they do not have the desire to carry out the academic tasks required of them."

With no doubt, such lack of motivation in academics leads to frustration and discontentment which compromise students' productivity in schools and well-being in life.

In this study, a promising result was obtained regarding achievement motivation. The students had a very law achievement motivation at the beginning of the study (M=2.17; SD= 1.09). But after receiving the ACT intervention for 10 weeks, it had rose to above average motivation (M= 62.36; SD= 25.76) some participant even scoring very high achievement motivation. There was a significant difference in effect (p =0.000, η^2=0.25). These results are consistent with those reported by others. Sadat, Ramezan and Yarali (2018) reported that acceptance and commitment therapy increased achievement motivation and quality of life at school among high school students. Other findings had empirically evidenced that mindfulness based cognitive therapies like ACT are effective methods to enhance achievement motivation (Keshavarz & Yousefi, 2019; Esteki et al., 2020).

Research had revealed that tendency to endeavor for success or reach a desired end is manifested through effort to succeed. And effort, the main indicator of motivation, is only deployed if the student believes in her/his ability to succeed. As Ryan and Deci (2002) states that when a given academic task is related to the student's value in life, the student gets it very important and get motivated. Tarabashkina (2011) also stresses the importance of value for academic success.

 ACT provides students to identify their values, set goals and work towards them in a committed way. This helps them to give meanings to what they do at school and outside. Dotson (2016) had clearly demonstrated that setting goals keeps students motivated and focused on desired outcomes and provides a clear direction for success. According to him, goals that are established in a SMART (specific, measurable, attainable, relevant, and time sensitive) way, supported with a specific plan of action, and thoroughly monitored produce high motivation and leads to the attainment of desired outcomes at school and in life. ACT, as an intervention, helps us achieve this all through its process elements, so that the students' achievement motivation can be improved.

Effect of ACT on Adjustment

Adjustment is a critical factor that helps students to succeed and flourish at school and beyond. This study had indicated that ACT increases students emotional, social, educational, and overall adjustments significantly. This finding is in harmony with many other findings (Azadeh et al., 2016; Keshavarz & Yousefi, 2019; Takahashia et al., 2020).

Adjustment determines students' psychological wellbeing and academic achievement. Sarkar and Banik (2017) boldly stated academic achievement as an outcome of student's

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adjustment to various changes. Adjustment to school includes many dimensions. Aggrawal (2004) mentions that the adjustment of adolescents very much depends on the fulfilment of their significant specific needs that consist of physical needs, emotional needs, social needs, intellectual needs, moral needs, and vocational needs. Sinha and Singha (1984), in their manual for adjustment inventory, classified the major adjustment areas that students need at school. These are emotional adjustment, social adjustment, and educational adjustment.

Research found that there is a significant difference in emotional, social, and educational adjustment among successful and unsuccessful students (Chauhan, 2013). In the current study, it was found that the emotional adjustment of participating students had been significantly improved after receiving ACT intervention (F (1, 43) =38.2, p = 0.000, η^2=0.48). Students face many stressors in school life. Proper emotional adjustment is crucial for their success. Research has revealed that maladjustment may lead students to drugs, alcohol, sexual activity, non-assertiveness, which is induced by fear, running from home, compromising values, loss of meaning in life and committing suicide (Sarkar & Banik, 2017; Kasayira, Kapandambira & Hungwe, 2007). So, this study brought us an alternative intervention, ACT, to help students adjust to life changes and challenges in a productive and healthy way.

Social adjustment is another dimension investigated in this research. The finding shows that there is a significant improvement in the social adjustment of students after ACT group intervention (F (1, 43) = 48.8, p = 0.000, η^2=0.53). As human beings are social beings, relationship has a crucial place in the life of human beings. Harvard's 75-years long study had revealed that the secret to living a happy life is meaningful relationships and connections (Waldinger, 2016). The research emphasized that healthy relationships not only do serve as an indicator for overall life satisfaction, but they also are an indicator for academic and career satisfaction. The researchers say that having a meaningful connection to the type of work or subjects someone is doing or studying is more important than achieving traditional success. So, students' social adjustment that helps them to fit within the social groups both inside and outside of the school is important for their academic achievement, wellbeing, and life satisfaction.

Academic (educational) adjustment is an important element in students' life. Intervention with ACT had pointed out a significant effect in boosting the academic/educational adjustment of students so that they can achieve their academic goals (F (1, 43) =30.6, p = 0.000, η^2=0.42). The findings showed there was a significant difference between participants in ACT and WLG in the educational adjustment. In other words, ACT group therapy significantly led to improve the educational adjustment of the students.

The sum of scores in all these three dimensions of adjustment led us to the overall adjustment of the student. The results obtained indicated that ACT group therapy had significantly improved the overall adjustment of the students (F (1, 43) =38.2, p = 0.000, η^2=0.71).

Effect of ACT on Life satisfaction

Life satisfaction is also an important element in student's life, which is most of the time overlooked or got less attention. In this study, life satisfaction was one of the outcome measures assessed. As, it is stated in the result part of this paper, both the ACT and WLG

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participants had lower level of life satisfaction and wellbeing as measured by PWI pre intervention. But the ACT group had shown a progress to an average mean score of personal wellbeing and life satisfaction (M=79.19). A significant difference was observed when ACT group was compared with the WLG [F(1,43)=13.9, p=0.001]. This result is similar with the findings of Gloster, Walder, Levin, Twohig, and Karekia (2020). Based on their meta-analysis of about 20 studies, they found that ACT intervention had brought a small to average improvement in the quality of students and other individuals' life. Katajavuori et al (2021) also found out ACT intervention had improved students' academic functioning and wellbeing or life satisfaction. This has a great implication for the success of students. In another study, it was indicated that students who had high life satisfaction had greater academic motivation, confidence and achievement and spend more time studying compared to students with low life satisfaction levels (Antaramian, 2017). Other studies pointed out that middle and high school students who have higher life satisfaction had showed positive attitudes toward their education, teachers, and school (Gilman & Huebner, 2006; OECD, 2017; Banos Baena-Extremera & Ortiz-Camacho, 2019). Earlier to them, Gilman and Huebner (2003) stressed that good educators should strive to improve the quality of their students' current life and rise their life satisfaction as highly as they care about their students' future life. So, this study had showed us one approach, ACT group intervention, that can be used to boost students' life satisfaction and help them flourish beyond their challenges and changes they face in life which intern improves academic motivation and performance.

Conclusions and Recommendations

The aim of this study was to investigate the effectiveness of acceptance and commitment therapy (ACT) group intervention on academic achievement motivation, adjustment, and life satisfaction among female high school students. The findings of this study have indicated that intervention with ACT in a school context had brought a significant improvement in psychological flexibility, academic motivation, adjustment (emotional, social, and educational/academic) and life satisfaction among students who received the intervention. The findings show that the effectiveness of ACT on all the outcome measures was statistically significant. The participants expressed what really mattered to them (goals and values) that give meaning to their lives. It also helped them to engage in actions which allow them to achieve their goals and live their values more fully. Through the exercises, activities and processes of ACT, the students identified what was holding them back from achieving their goals and designed effective strategies to combat them. It also helped them to develop, their ability to be attentive and aware of what is happening inside and outside of themselves, while introducing an attitude of acceptance. By doing that their achievement motivation, adjustment and life satisfaction were boosted. Based on the findings of this study, it can be concluded that ACT group intervention can help to boost female high school students' achievement motivation, adjustment, and satisfaction in life.

The findings of this study have provided support about the effectiveness of ACT as a school-based, group-format intervention for female high school students. So, the investigator recommends trainers, teachers, school counselors, and therapists use this intervention method to improve personal, social, and educational adjustments, academic motivations, and life satisfaction of female high school students. As there is a shortage of school counselors,

trained teachers and psychologists can use school-based group ACT as a universal prevention program to address lack of motivation and adjustment problems. Its transdiagnostic nature and applicability benefits the majority of students who are hard to address on one-to-one counseling approach.

Schools need to work on the psychological flexibility of students through curricular and co-curricular activities so that the students' academic motivation will be positively affected.

Further research is recommended to see whether ACT has the same effect on male students and students at lower grades as some evidence suggest that women and men use different coping strategies which may impact how effective treatments are for people of different genders. So, it would be good to examine gender differences in response to ACT.

Ethical Considerations

The study was approved by Addis Ababa University's College of Education and Behavioral Studies School of Psychology. Informed written consent was taken from each participant. Several measures were taken to protect the privacy of participants.

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Ethiopian-affiliated Research in Scopus and Web of Science: A Bibliometric Mapping

Addisalem Tebikew Yallew [a] Asrat Dereb [b2]

[a] PhD. Candidate, Faculty of Education, University of the Western Cape, Cape Town, South Africa
[b] PhD. Candidate, Department of Educational Planning and Management, Bahir Dar University, Ethiopia;
  Faculty of Management and Business, University of Tampere, Finland

Abstract

This paper explores the research landscape in Ethiopia using 20-year data drawn from Scopus and Web of Science (WoS) databases. The focus was to assess yearly research productivity, key research areas, journals in which researchers publish, collaborating countries, languages used to publish papers, and major agencies that fund research. The findings indicate that research productivity has been increasing over the past decades, with biomedical research dominating much of the output. Addis Ababa, Gondar, Jimma, Mekelle and Bahir Dar universities were identified as the institutions with a relatively higher level of research productivity than the other universities in the country. The top five collaborating countries for Ethiopian researchers were found to be the US, UK, India, Germany, and South Africa. The dominant language of research was English. However, since the country has a strong tradition of producing knowledge in local languages, this finding indicates the need to incorporate research published in African languages in journals and databases.

Introduction

The research function of universities in Africa has garnered much attention in recent years (Andoh, 2017; Cloete et al., 2015; Schalkwyk & Cloete, 2019) as the function of the universities as central institutions for the production of new knowledge has come into the limelight (Altbach, 2009; Douglass, 2016; Salmi, 2009). This continental commitment to research has also been amplified in documents such as the Africa Union's Agenda 2063 and Science Technology and Innovation Strategy for Africa 2024 (STISA). Against this backdrop, this paper provides a bibliometric overview of research productivity from the second most populous country in Africa, Ethiopia, using data mainly obtained from Scopus and the Web of Science (WoS).

This analysis was conducted with the idea that data on research performance helps to inform strategic decisions by providing a partial view of the strengths and weaknesses of

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[2]**CONTACT** Asrat Dereb, email: asd.dereb5@gmail.com

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institutions and systems at the macro, meso, and micro levels. Considering their respective missions and priorities, systems and universities could also utilize bibliometric data to set goals, chart progress, make budgetary and hiring decisions, invest in facilities, and work with external agencies.

To this end, this article focuses on addressing the following main research question: What discernible patterns can be deduced regarding research and publication from Ethiopia considering data from Scopus and WoS? The study also attempts to answer the following specific questions: (1) how much research is published? (2) has the level of productivity been increasing or decreasing? (3) what is the level of productivity in the most research-productive institutions? (4) what are the primary publication sources/outlets? (5) what does the publication landscape look like when considered from the vantage point of main research areas? And (6) what can be deduced from collaboration and funding patterns as well as languages of publication?

This mapping of a national higher education research system was undertaken while recognizing the transnational and global nature of science. Nevertheless, besides the practical significance mentioned above, making bibliometric and scientometric analysis, especially in nation-states such as Ethiopia, where such mappings have not been undertaken, was expected to provide a much needed, albeit partial picture of research and publication landscapes.

Literature Review

This section presents a brief literature review. The review focuses on the state of research in higher education institutions of Ethiopia and the key aspects of bibliometric and bibliometric study.

Higher Education and Research in Ethiopia

A country of 117.9 million people (United Nations Population Fund (UNFPA), 2021), Ethiopia currently has 51 public Higher Education Institutions (HEIs) (Tamrat, 2022). Like other higher education systems in African, the research function of these institutions has gained more traction in the past two decades. This development has been especially the case since the establishment of the then Ministry of Science and Higher Education (hereafter, MoSHE) in 2018. Between 2018 and 2021, the former ministry (a subdivision of the Ministry of Education since October 2021) has produced a number of reports and policy directives regarding the enhancement of research productivity. These include: developing a differentiated system of higher education, adopting a national open access policy, compiling a list of nationally accredited journals, ratifying a national science and higher education internationalization policies, and providing policy for promotion and research incentivization (MoSHE, 2020a, 2020b, 2020d, 2020c).

The science policy (MoSHE, 2020d) puts forward specific strategies for promoting research and innovation in the country. This includes the need to establish a national science fund and a national research council, strengthen research linkages among universities, research institutions, and industries, and develop mechanisms to identify, collect, organize, disseminate,

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and utilize science and technology to support and facilitate technology transfer and diffusion at national, regional, and international levels.

Although the research function is given priority in policy documents and university mission and vision statements, research output from the country's higher education system is still considered low. Studies suggest that Ethiopian higher education remains overwhelmingly teaching-oriented (Van Deuren et al., 2016; Yallew, 2020) and the impressive gains made in expanding the country's higher education system do not seem to be accompanied by a parallel expansion in terms of research productivity (Ashcroft, 2011; Van Deuren et al., 2016; Weldemichael, 2014). For example, at Mekelle University, the institution with relatively higher normalized research impact, among a total of 1456 academic staff members not more than 25 articles were published in 2013 (Weldemichael, 2014). A case study at Jimma University confirms that university teaching staff members are only marginally engaged in research (Melese, 2013).

In addition to poor research culture, research productivity in Ethiopian higher education is also linked to the low or chronic under-investment and financial support allocated to this function of higher education (Kitaw, 2006; Yallew, 2020). The fifth Education Sector Development Program (ESDP V) indicates that research funding in Ethiopian universities accounted for only 1% of their total budget (Ministry of Education (MoE), 2015). Compared to other countries in Africa, for example, South Africa, Ethiopia's research and development expenditure was three times less (Molla & Cuthbert, 2016). Many public universities, including the national flagship university, Addis Ababa University, also seem to depend on limited government and donor funding for research and lag behind African countries in seeking grants and international research funding. Yigezu (2013, p.59) also expressed the concern that HEIs like Addis Ababa University have budget expenditures that are "skewed towards salaries and food rather than academic activities", leaving only about 30–40% of the recurrent budget for the critical elements of academic activities such as research, publication, innovation, and postgraduate training.

In addition to challenges pertaining to funding, other reasons provided for the limited research engagement and productivity include qualitative and quantitative shortages of research staff, limited research infrastructure, lack of clear research priorities and agendas, and poor research management and support systems (Kitaw, 2006; MoE, 2015; Weldemichael, 2014). Constraints on academic freedom also limit the aspirations of academic staff in taking the initiative to conduct research and address critical societal issues (Weldemichael, 2014). Low graduate student enrolment, too, results in limited research outputs since a considerable amount of higher education research is derived from research undertaken by graduate and postgraduate students. It is encouraging that many of the challenges mentioned above are recognized in the national science policy.

Bibliometric Research and this Study

This paper operationalizes bibliometric analysis as the quantitative study and statistical analysis of scientific publications such as journal articles, communication in science, science

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policy, and citation counts (Milojević & Leydesdorff, 2013). Bibliometrics has been employed worldwide for quantification and assessment of the research output of researchers, research institutions, academic institutions, and countries.

By focusing on publications from Ethiopia, this article adds to the limited but already existing research in bibliometrically mapping research output from Africa. A survey of bibliometric literature from the continent indicates that much of the research focuses on assessing research mainly from specific disciplinary vantage points, especially in the health and natural sciences. These include studies in biomedical sciences (Nwagwu, 2006); biotechnology (Molatudi & Pouris, 2006), bioinformatics (Molatudi et al., 2009), health sciences research (Mugomeri et al., 2017; Uthman et al., 2015; Wiysonge et al., 2013; Wonkam et al., 2011); and the natural sciences (Matthews, 2012; Sooryamoorthy, 2013). When it comes to bibliometric analysis on higher education studies, there has been some research exploring collaborations (Schubert & Sooryamoorthy, 2010), university rankings (Matthews, 2012), and the validity of research metrics (Bouabid & Martin, 2009; Kahn, 2011). Many of these studies are conducted in the context of South Africa. Moreover, there is a dearth of research when it comes to the context this study focuses on.

Methods

In this study, Scopus and WoS were chosen since the study aimed to investigate research affiliated with Ethiopia archived in the international domain. National and institutional documents also make regulations and guidelines for research publishing by including these databases as benchmarks (MoSHE, 2020b). In addition, it is worth stating that there were no alternative comprehensive national archives to enable this analysis.

An advanced search was conducted in Scopus and the WoS Core Collection using the word "Ethiopia" in the country field. For Scopus, a country affiliation search was done. This last search for information was conducted in March 2021. The WoS information was obtained with an advanced search (CU=Ethiopia), and the "Refine results" option was used to collect information about the various dimensions the study explored. For WoS, data were extracted from the following datasets:

- Science Citation Index Expanded (SCI-EXPANDED)
- Social Sciences Citation Index (SSCI)
- Arts & Humanities Citation Index (A&HCI)
- Emerging Sources Citation Index (ESCI)
- Conference Proceedings Citation Index Science (CPCI-S)
- Conference Proceedings Citation Index Social Science (CPCI-SSH)
- Book Citation Index Sciences (BKCI-S), and
- Book Citation Index Social Sciences (BKCI-SSH).

Then, metadata, including the year of publication, titles, main research areas, source journals, names of authors publishing the articles, collaborating countries and institutions, and funding agencies, were downloaded into Microsoft Excel. As the study sought to provide a

panoramic view of publications pertaining to Ethiopia, no document types were excluded from the final analysis. Additional manual coding was used to refine and merge funding agencies and collaborating institutions that were assigned different values in the databases because they were spelled differently but were the same agencies and institutions. The search was conducted on 25 March via the library of the University of Western Cape.

The analysis focused on 20 years (2001-2020) cognizant that the turn of the 21st century marks the era where African universities started to 'rediscover' their research mission (Andoh, 2017; van Schalkwyk et al., 2018). It also marks the turning point for Ethiopian higher education in that the early 2000s mark the birth of the main cohort of first-generation public universities. It is noteworthy that the country had only two public HEIs between the 1950s and the last decade of the 20th century (Yirdaw, 2016). However, expansion initiatives that started towards the end of the last decade of the 20th century increased state-run universities to eight by 2002 (Bishaw & Melesse, 2017).

Results and Discussion

This section presents the study findings along with discussing their implications in eight subsections. In line with the research questions and objectives, the subsections provide a description and assessment of overall research productivity, document types, most productive research institutions, publication outlets, main research areas, collaboration patterns, funding organizations, and languages of publication.

Research Output

The 20-year search (2001-2020) resulted in 32836 documents for Scopus and 28584 for WoS. As presented in Table 1 and Figure 1, productivity has been increasing for Ethiopian-affiliated research.

Table 1

Annual Research Productivity

	Scopus				WoS		
Year	#	%	Annual rate of change in %	#	%	Annual rate of change in %
2001	261	0.79		216	0.76	
2002	294	0.9	12.64	275	0.96	27.31
2003	362	1.1	23.13	300	1.05	9.09
2004	376	1.15	27.89	314	1.1	4.67

	Scopus				WoS		
Year	#	%	Annual rate of change in %	#	%	Annual rate of change in %
2005	431	1.31	14.62	332	1.16	5.73
2006	514	1.56	19.26	343	1.2	3.31
2007	624	1.9	21.40	451	1.58	31.49
2008	644	1.96	3.20	471	1.65	4.43
2009	771	2.35	19.72	588	2.06	24.84
2010	890	2.71	15.43	701	2.45	19.22
2011	1083	3.29	21.69	825	2.89	17.69
2012	1315	4	21.42	864	3.02	4.73
2013	1602	4.88	21.83	1116	3.9	29.17
2014	1911	5.82	19.29	1264	4.42	13.26
2015	2012	6.13	5.29	1846	6.46	46.04
2016	2224	6.77	10.54	2107	7.37	14.14
2017	3030	9.23	36.24	2947	10.31	39.87
2018	3627	11.05	19.70	3295	11.53	11.81
2019	4513	13.74	24.43	4163	14.56	26.34
2020	6352	19.34	40.75	6166	21.57	48.11
Total/ average	32836		19.92	28584		20.07

As it can be seen from Table 1 between 2001 and 2020 there has been an exponential increase of more than 23-fold for Scopus, and more than 27-fold for WoS indexed publications. On average, research output has increased by 19.92% annually for Scopus indexed research and by 20.07% for WoS. However, the most remarkable increase was registered between 2019 and 2020, with a 40.45% rise in output for data accessed through Scopus and 48.11% for WoS. Overall, it is worth noting that Scopus documents 4252 (an increase of 14.88%) more documents than WoS. This observation complements findings made by other studies (e.g. Mongeon & Paul-Hus, 2016; Vera-Baceta et al., 2019) that suggest Scopus' broader coverage.

Figure 1

A Twenty-year Overview of Research Output (Scopus, 2021; WoS, 2021)
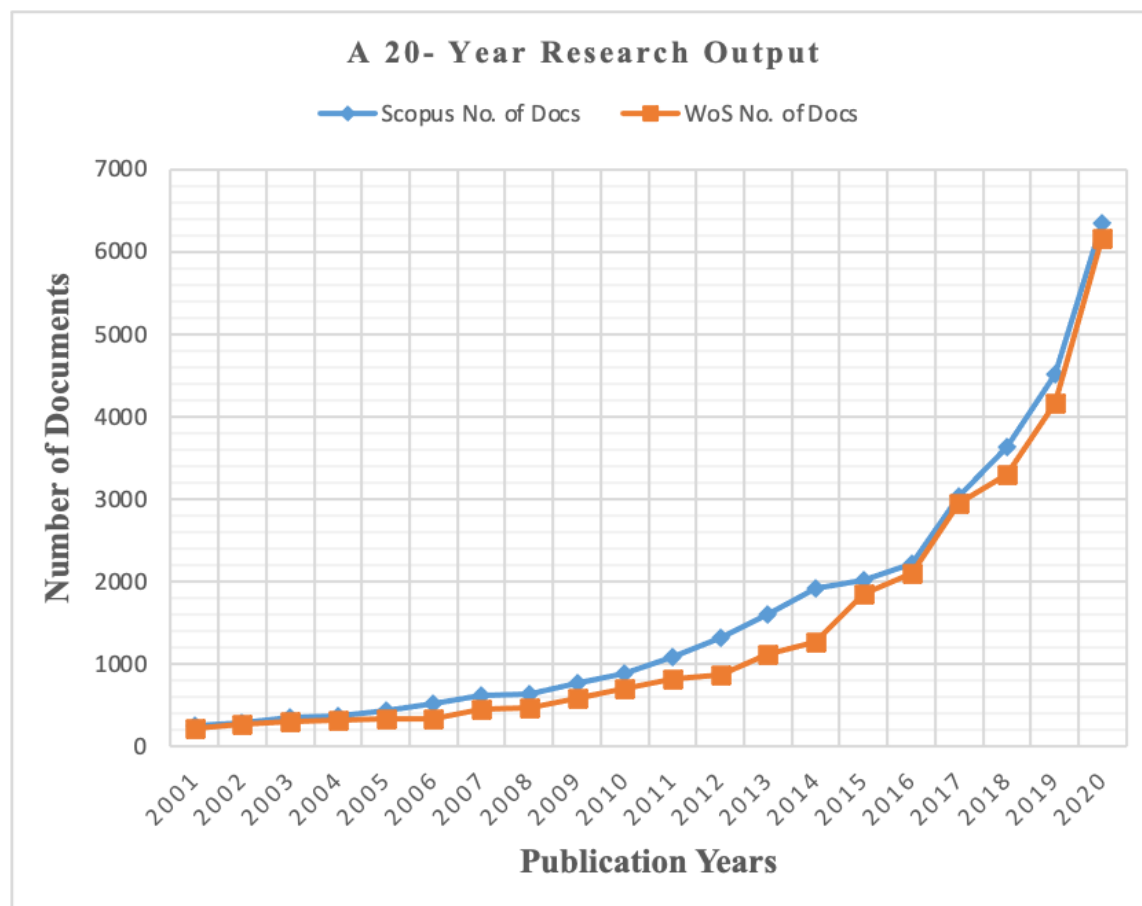
Also noteworthy is that in 2015, the year WoS introduced the Emerging Sources Citation Index, Ethiopian-affiliated research increased by 46.06% compared to 2014. This phenomenon highlights the importance of decisions like this to enhance research visibility from underrepresented regions.

Document Types

Table 2

Document Types

No.	Scopus			WoS		
	Document type	**#**	**%**	**Document type**	**#**	**%**
1	Article	27801	84.66	Article	24082	84.25
2	Review	1840	5.60	Review	1622	5.68
3	Conference paper	1360	4.14	Meeting abstract	1328	4.65

No.	Scopus			WoS		
	Document type	**#**	**%**	**Document type**	**#**	**%**
4	Book chapter	999	3.04	Proceedings' paper	863	3.02
5	Note	191	0.58	Book chapter	678	2.37
6	Editorial	177	0.54	Editorial material	483	1.69
7	Letter	165	0.50	Early access	321	1.12
8	Erratum	164	0.50	Letter	162	0.57
9	Book	61	0.19	Correction	140	0.49
10	Data paper	31	0.09	Book review	74	0.26
11	Short survey	30	0.09	Data paper	34	0.12
12	Retracted	10	0.03	News item	24	0.08
13	Undefined	7	0.02	Bibliography	10	0.04
14				Retraction	7	0.02
15				Biographical item	5	0.02
16				Retracted publication	5	0.02
17				Poetry	3	0.01

As indicated in Table 2, researchers affiliated with Ethiopian universities and research centers published a significant share of their work as journal articles, i.e., 84.66% and 84.25% in Scopus and WoS, respectively. Reviews account for 5.60% of the documents in Scopus and 5.67% in WoS. This finding might have to do with the fact that both databases have focused on indexing journals rather than other types of documents. Therefore, it is not surprising that the coverage of books and conference proceedings in both databases for Ethiopia-affiliated research was generally low. The WoS' Book Citation Index was added only in 2011 while Scopus' Book Expansion Project was undertaken between 2013 and 2015 (Pranckutė, 2021).

Research-productive Institutions

This section provides an overview of research productivity per HEI or research center. To this end, (1) we provided an overview of the top 20 research productive universities and research centers in the two databases, and (2) we calculated the per capita (per researcher) research productivity of mainly public universities to show a more nuanced picture of the level of research productivity. This section of the analysis focused only on 2020, for we were able to obtain publicly available, university disaggregated academic staff data only for this particular year. Research institutions were also excluded because of the paucity of staff-related data.

We would like to indicate that we removed non-Ethiopian affiliated institutions from this analysis since our objective was to map the country's research landscape. As presented in Table 3, the oldest university in the county, Addis Ababa University, is the leading university in research productivity. What are conventionally known as first-generation universities, namely: Gondor, Jimma, Mekelle, Bahir Dar, Haramaya, and Hawassa, take the following six places. This dominance of Addis Ababa University is understandable since the university is the oldest and the most prominent institution with higher research funding and collective research capacity. A decade ago, the university had 530 Ph.D. holders, while the remaining 21 universities had 586 of the same (Areaya, 2010). Though this capacity gap is narrowing, 2020 data indicates that Addis Ababa University has more than twice as many assistant professors and above (N=1291) compared to the second and third most research-productive universities (Gondar and Jimma) combined (N=1178).

Table 3

Research Productivity per Institution

No.	Scopus			WoS		
	Institution	**#**	**%**	**Institution**	**#**	**%**
1	Addis Ababa University	9239	28.14	Addis Ababa University	8452	29.57
2	University of Gondar	3084	9.39	University of Gondar	4362	15.26
3	Jimma University	2824	8.60	Jimma University	2419	8.46
4	Mekelle University	2552	7.77	Mekelle University	2325	8.13
5	Bahir Dar University	2324	7.08	Bahir Dar University	2025	7.08
6	Haramaya University	2095	6.38	Hawassa University	1736	6.07
7	Hawassa University	1895	5.77	Haramaya University	1665	5.83
8	Ethiopian Institute of Agricultural Research	815	2.48	International Livestock Research Institute (ILRI)	769	2.69
9	International Livestock Research Institute Addis Ababa	789	2.40	Arba Minch University	623	2.18
10	Ethiopian Public Health Institute	765	2.33	Ethiopian Institute of Agricultural Research Eiar	577	2.02
11	Arba Minch University	730	2.22	Debre Markos Univ	478	1.67
12	Debre Markos University	629	1.92	Ethiopian Publ Hlth Inst	440	1.54
13	Wollo University	603	1.68	Armauer Hansen Res Inst	438	1.53
14	Armauer Hansen Research Institute	576	1.75	Ambo University	436	1.53

No.	Scopus			WoS		
	Institution	#	%	Institution	#	%
15	Aksum University	499	1.52	Adama Science Technology University	367	1.28
16	Ambo University	461	1.40	Debre Berhan University	348	1.22
17	Wollega University	457	1.39	Wolaita Sodo University	347	1.21
18	Debre Berhan University	446	1.36	Dilla University	344	1.20
19	Wolaita Sodo University	424	1.29	Wollo University	340	1.19
20	Dilla University	391	1.90	Wollega University	333	1.17

Besides, Table 4 presents the 2020 per capita publication output. After filtering the data for the specific year, which yielded a total of 6353 publications for Scopus and 6200 for WoS, documents for the top 20 research-productive institutions were retained. Academic staff data extracted from the document compiled by MoSHE to develop a differentiated higher education system (MoSHE, 2020a) was then used to calculate the per capita output. This calculation was made taking into consideration: (1) the number of full-time academic staff (lecturer and above) each university reported for 2020 to align the analysis with systemic expectations, and (2) the number of assistant professors and above (Ph.D. degrees and above) to provide a profile of research productivity close to international comparisons. It is worth elaborating that an assistant professorship in Ethiopia can automatically be obtained when academic staff obtain their PhDs or through earning two publication points without having a Ph.D. (MoSHE, 2020b). Therefore, we would like to state that the assistant professor rank-based analysis not only includes Ph.D. holders as often used to assess research capacity and output, but it also includes academic staff with master's degrees that fulfilled the publication expectations.

The per capita analysis indicates that the universities with better research capacity, which are also dubbed as research universities (Addis Ababa, Gondor, Bahir Dar, Mekelle, Jimma) in the latest higher education differentiation scheme of the country (MoSHE, 2020a), have either slightly more than one or close to one publication per capita. Given their minimal research capacity, especially the number of assistant professors and Ph.D. holders, some of the newly established universities (universities of applied sciences and comprehensive universities) also demonstrated a higher per capita research output than the older generation universities.

Table 4

Per Capita Research Productivity for 2020

		Scopus (N=6353)					WoS (N=6200)				
No.	University	Annual research output	Academic staff (lecturer and above)	Per capita research output (lecturer and above)	Academic staff (Asst. Prof. and above)	Per capita research output (Asst. Prof. and above)	University	Annual research output	Academic staff (lecturer and above)	Per capita research output (lecturer and above	Academic staff (Asst. Prof. and above)	Per capita research output (Asst. Prof. and above)
1	Addis Ababa University	1239	2889	0.43	1291	0.96	Addis Ababa University	1,266	2889	0.44	1291	0.98
2	University of Gondar	750	2648	0.28	682	1.1	University of Gondar	760	2648	0.29	682	1.14
3	Bahir Dar University	659	1626	0.41	510	1.29	Bahir Dar University	598	1626	0.37	510	1.17
4	Mekelle University	546	1580	0.35	572	0.95	Mekelle University	538	1580	0.34	572	0.94
5	Jimma University	537	1392	0.39	496	1.08	Jimma University	514	1392	0.37	496	1.04
6	Hawassa University	370	1345	0.28	418	0.89	Hawassa University	361	1345	0.27	418	0.86
7	Haramaya University	322	956	0.34	335	0.96	Haramaya University	322	956	0.34	335	0.96
8	Wollo University	253	750	0.34	137	1.85	Wollo University	247	750	0.33	137	1.8
9	Arba Minch University	216	1091	0.2	291	0.74	Debre Markos University	195	728	0.18	99	1.97
10	Debre Markos University	205	728	0.28	99	2.07	Arba Minch University	188	1091	0.26	291	0.65

		Scopus (N=6353)					WoS (N=6200)				
No.	University	Annual research output	Academic staff (lecturer and above)	Per capita research output (lecturer and above)	Academic staff (Asst. Prof. and above)	Per capita research output (Asst. Prof. and above)	University	Annual research output	Academic staff (lecturer and above)	Per capita research output (lecturer and above	Academic staff (Asst. Prof. and above)	Per capita research output (Asst. Prof. and above)
11	Debre Berhan University	204	861	0.24	224	0.91	Debre Berhan University	183	861	0.21	224	0.82
12	Debre Tabor University	164	389	0.42	11	14.9	Ambo University	161	1347	0.12	475	0.34
13	Ambo University	160	1347	0.12	475	0.34	Debre Tabor University	160	389	0.86	11	14.55
14	Aksum University	158	773	0.2	67	2.36	Wollega University	139	735	0.18	167	0.83
15	Dilla University	144	729	0.2	86	1.67	Aksum University	136	773	0.19	67	2.03
16	Wollega University	144	735	0.2	167	0.86	Dilla University	131	729	0.18	86	1.52
17	Adigrat University	123	600	0.21	75	1.64	Adama Science and Technology University	126	650	0.19	207	0.61
18	Woldia University	123	515	0.24	27	4.56	Mizan Tepi University	126	691	0.24	44	2.86
19	Mizan-Tepi University	121	691	0.18	44	2.75	Adigrat University	124	600	0.21	75	1.65
20	Wolaita Sodo University	112	640	0.18	159	0.7	Woldia University	124	515	0.24	27	4.59

However, it is worth noting that this is a rough indicator that does not present disciplinary and individual differences. It could be more nuanced through a longitudinal analysis considering staff profiles and publication outputs over several years. We were not able to do that because we could not obtain data for the staff profile of universities except for 2020. Yet another potent indicator is the weighted per capita knowledge output that considers a researcher's publication and supervision profiles. In this regard, the average number of master and Ph.D. students a researcher supervised to completion could be calculated along with the publication output to provide an institution's research capacity.

Publication Outlets

Table 5

Top Journals for Ethiopian-affiliated Research

No	Scopus			WoS		
	Source title	#	%	Source title	#	%
1	Plos One	1152	3.50	Plos One	1145	4.01
2	Ethiopian Medical Journal	707	2.15	BMC Public Health	479	1.68
3	BMC Research Notes	694	2.11	Ethiopian Journal of Health Development	384	1.34
4	BMC Public Health	479	1.46	Tropical Animal Health and Production	319	1.12
5	Livestock Research for Rural Development	319	0.97	American Journal of Tropical Medicine and Hygiene	310	1.09
6	Tropical Animal Health and Production	319	0.97	BMC Infectious Diseases	299	1.05
7	Ethiopian Journal of Health Development	309	0.94	Ethiopian Journal of Health Sciences	281	0.98
8	BMC Infectious Diseases	299	0.91	BMC Pregnancy and Childbirth	254	0.89
9	Ethiopian Journal of Health Sciences	258	0.79	Tropical Medicine International Health	224	0.78
10	BMC Pregnancy and Childbirth	255	0.78	Cogent Food Agriculture	207	0.72
11	Malaria Journal	204	0.62	Malaria Journal	205	0.72
12	Plos Neglected Tropical Diseases	195	0.59	Plos Neglected Tropical Diseases	196	0.69
13	BMC Health Services Research	163	0.50	Ethiopian Medical Journal	183	0.64
14	BMJ Open	161	0.50	Transactions Of the Royal Society of Tropical Medicine and Hygiene	167	0.58

Reflective of Ethiopia's biomedicine-research dominated publication landscape, the prominence of journals related to these fields of study is noticeable. Another noteworthy observation is the limited visibility of Ethiopian journals in the top 20 list. Only three journals, affiliated with institutions, and societies from Ethiopia are represented in this list. Overall, only five Ethiopian-affiliated journals are indexed in Scopus and four for WoS. This finding is concerning since there are 72 Journals published by well-known institutions in Ethiopia (Ethiopian Academy of Sciences (EAS), 2017).

The Ethiopian-affiliated journals indexed in WoS and Scopus are published by three universities and two professional societies, namely:

- Ethiopian Medical Association-affiliated *Ethiopian Medical Journal*
- The Addis Ababa University-affiliated *Ethiopian Journal of Health Development*
- Jimma University-affiliated *Ethiopian Journal of Health Sciences*
- The Mekelle University-affiliated *Momona Ethiopian Journal of Science*, and
- Chemical Society of Ethiopia-affiliated *Bulletin of The Chemical Society of Ethiopia*.

Research Areas

The primary research areas in the university mainly focus on medical and health sciences, and agriculture and life sciences as demonstrated in Table 6. This finding is also backed up by a World Bank report by Blom et al. (2015), which indicates that 21% of the research coming out of Ethiopia is concentrated on these particular disciplines. From the report, it can be inferred that close to 70% of the research in the country is concentrated on medical sciences, engineering, agriculture, and the natural sciences.

The share of engineering is only 4% and, like in the other parts of Africa, research in STEM fields seems to be lagging behind other disciplines, though policy-wise the country gives considerable attention to the pivotal role science and technology play in achieving the goals set by the Ten-Year National Development Plan (2021-2030) which replaced the Growth and Transformation Plans (GTPs). The ten-year plan is aligned with international and regional commitments such as the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063. The findings also suggest a significant under representation of research in social sciences and humanities.

Table 6

Main Research Areas

No.	Scopus			WoS		
	Research Area	#	%	Research Area	#	%
1	Medicine	11981	22.16	Public Environmental Occupational Health	3519	12.31
2	Agricultural and Biological Sciences	8385	15.51	Agriculture	2917	10.21
3	Environmental Science	4281	7.92	Environmental Sciences Ecology	2467	8.63
4	Biochemistry, Genetics and Molecular Biology	4191	7.75	Science Technology Other Topics	2356	8.24

No.	Scopus			WoS		
	Research Area	#	%	Research Area	#	%
5	Social Sciences	3778	6.99	Infectious Diseases	1872	6.55
6	Immunology and Microbiology	2290	4.23	Tropical Medicine	1555	5.44
7	Engineering	2153	3.98	Engineering	1161	4.06
8	Earth and Planetary Sciences	1969	3.64	Health Care Sciences Services	1024	3.58
9	Multidisciplinary	1665	3.08	Chemistry	992	3.47
10	Veterinary	1403	2.59	General Internal Medicine	982	3.44
11	Computer Science	1374	2.54	Veterinary Sciences	908	3.18
12	Pharmacology, Toxicology and Pharmaceutics	1230	2.27	Plant Sciences	906	3.17
13	Chemistry	1209	2.23	Pharmacology Pharmacy	840	2.94
14	Physics and Astronomy	1079	1.99	Business Economics	829	2.90
15	Materials Science	988	1.82	Parasitology	826	2.89
16	Nursing	920	1.70	Water Resources	789	2.76
17	Economics, Econometrics and Finance	900	1.66	Obstetrics Gynecology	759	2.66
18	Energy	736	1.36	Geology	732	2.56
19	Mathematics	721	1.33	Materials Science	586	2.05
20	Chemical Engineering	663	1.23	Pediatrics	583	2.04

Collaboration Patterns

As presented in Table 7, Ethiopian-affiliated institutions and researchers collaborate with researchers from around the world. The collaboration patterns suggest the dominance of the US and Western European countries. This particular finding is similar to the findings of (Adams et al., 2014) and Narváez-Berthelemot et al. (2002) in that the dominant collaboration and co-authorship patterns are with European and North American countries, and that there seems to be limited south-south and intra-Africa collaboration. Encouraging signs of south-south collaboration are also noted with countries such as India, South Africa, Kenya and China featuring in the top 20 list. Researchers affiliated with Nigeria, Uganda and Tanzania are also represented in the list.

Table 7

Collaborations by Country

No.	Scopus			WoS		
	Country	#	%	Country	#	%
1	United States	4694	10.42	USA	4699	16.44

No.	Scopus			WoS		
	Country	#	%	Country	#	%
2	United Kingdom	2830	6.46	England	2585	9.04
3	India	2648	6.04	India	1976	6.91
4	Germany	1822	4.16	Germany	1709	5.98
5	South Africa	1665	3.80	South Africa	1565	5.48
6	Netherlands	1571	5.59	Netherlands	1525	5.34
7	Belgium	1329	3.03	Belgium	1328	4.65
8	Kenya	1231	2.81	Australia	1165	4.08
9	Australia	1159	2.65	Kenya	1154	4.04
10	Norway	1156	2.64	Norway	1124	3.93
11	Sweden	1084	2.48	Sweden	1079	3.78
12	China	899	2.05	China	941	3.29
13	France	875	2.00	Canada	884	3.09
14	Canada	854	1.95	France	858	3.00
15	Italy	837	1.91	Italy	790	2.76
16	Switzerland	756	1.73	Switzerland	789	2.76
17	Nigeria	591	1.35	Nigeria	622	2.18
18	Uganda	589	1.35	Spain	586	2.05
19	Spain	558	1.27	Uganda	555	1.94
20	Tanzania	551	1.26	Japan	532	1.86

It is worth noting, however, that different collaboration patterns emerge when the analysis is disaggregated by individual institutions. For instance, if we take the national flagship HEI, Addis Ababa University, many of the top collaborating institutions are other Ethiopian HEIs. This corroborates Adams et al. (2014, p. 551) assertion that "Ethiopia's research base is distinctive in being substantial, growing and yet almost entirely domestic." This suggests   that though there are ties with researchers mainly from the global north, Ethiopian researchers considerably collaborate with colleagues within the country's higher education system as well. Admittedly, this claim needs to be backed up with a further network analysis.

Funders

The findings suggest public universities' output is derived from limited research funding. For instance, the WoS data indicated 13789 records (48.24%) do not contain data for the funding dimension analyzed. This finding could lead one to assume that individual researchers conduct the majority of research and that there is limited state or international funding support. This funding-related analysis could be reflected upon considering the

country's higher education budgeting, which accounts for 34% of the overall education budget. According to data obtained from Ministry of Finance and Economic Development (MoFED, 2020), in the last six consecutive years, the research and development budget share of public HEIs accounts for about 4% or less of universities' budget, which has four major program components: administration and management, teaching-learning, research and development, and consultancy and community services.
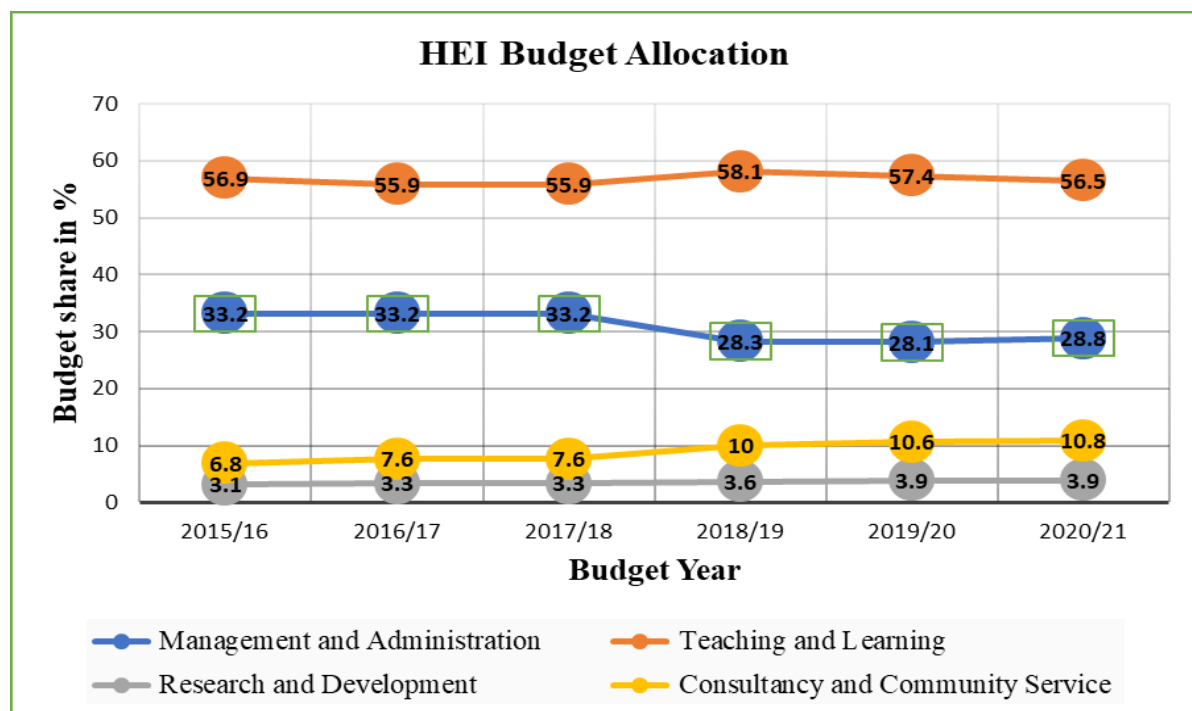
Table 8

Major Funders

No.	Scopus		WoS	
	Funding agency	**#**	**Funding agency**	**#**
1	Addis Ababa University	1010	European Commission	837
2	Bill and Melinda Gates Foundation	464	United States Department of Health Human Services	789
3	United States Agency for International Development	418	National Institutes of Health (NIH USA)	685
4	University of Gondar	378	Addis Ababa University	631
5	Jimma University	366	United States Agency for International Development (USAID)	549
6	Mekelle University	309	UK Research Innovation UKRI	548
7	Medical Research Council	295	Bill Melinda Gates Foundation	499
8	National Institutes of Health	279	CGIAR	445
9	National Natural Science Foundation of China	258	University Of Gondar	386
10	Bahir Dar University	251	Jimma University	347
11	Wellcome Trust	246	Wellcome Trust	343
12	National Science Foundation	230	National Natural Science Foundation of China (NSFC)	305
13	Haramaya University	223	National Science Foundation (NSF)	260
14	Deutscher Akademischer Austauschdienst	215	Medical Research Council (UK-MRC)	259
15	Styrelsen för Internationellt Utvecklingssamarbete	206	Deutscher Akademischer Austausch Dienst (DAAD)	241
16	European Commission	189	Mekelle University	228
17	Seventh Framework Programme	186	World Health Organization (WHO)	180
18	Natural Environment Research Council	185	Haramaya University	168
19	Ethiopian Institute of Agricultural Research	164	Natural Environment Research Council (NERC)	167
20	Hawassa University	161	NIH Fogarty International Center (FIC)	164

International donors and funding agencies support a considerable percentage of the limited overall funding for published research, as presented in Table 8. Reliance on international funders is unsustainable, though it is undeniable that international funders and agencies have played a significant role in building research capacities in Ethiopia and on the African continent at large. The case of UK Research and Innovation (UKRI), the sixth-largest funder for Ethiopian-affiliated research according to WoS, is a case in point here. It was reported that the organization's aid-related budget cut worth $166 million for 2021-2022 sent shockwaves around research communities across the African continent (Nordling, 2021). This reliance is concerning since, in a way, it influences what is researched, who decides the agenda, where and how the research is published and disseminated, and which disciplines gain more attention while others do not (van Schalkwyk et al., 2018). Initiatives and provisions to set up a competitive national research fund as stipulated in both the science and higher education policies (MoSHE, 2020d, 2020c) could help create a more sustainable and self-reliant research ecosystem.

Figure 2

Budget Share of Research and Development in Public Universities in Comparison to Other Core Activities

Source. Ministry of Finance and Economic Development (2020).

Languages

As presented in Table 9, almost all of the studies are published in English. This finding is similar to research in other contexts as well. According to Vera-Baceta et al. (2019), 92.64% of global research archived in Scopus is in English, while the language accounts for 95.37% in WoS. A closer analysis of the Ethiopian linguistic context where English is a foreign language to researchers might lead one to find this trend concerning. (Mendisu & Yigezu, 2014), for instance, question the dominant use of the language, taking

the case of *The Journal of Ethiopian Studies* though the journal is indexed neither in Scopus nor in WoS. It is, however, worth mentioning that English is the official medium of instruction in the country's higher education system.

Table 9

Languages of Publication

No.	Scopus			WoS		
	Language	**#**	**%**	**Language**	**#**	**%**
1	English	32771	99.80	English	28546	99.87
2	French	47	0.14	German	15	0.05
3	Spanish	23	0.07	French	12	0.04
4	German	19	0.06	Spanish	9	0.03
5	Portuguese	7	0.02			
6	Dutch	4	0.01			
7	Polish	4	0.01			
8	Russian	4	0.01			
9	Chinese	3	0.01			
10	Croatian	3	0.01			
11	Turkish	3	0.01			
12	Afrikaans	2	0.01			
13	Arabic	2	0.01			
14	Hungarian	2	0.01			
15	Italian	2	0.01			
16	Norwegian	2	0.01			
17	Thai	2	0.01			

Though it is often a taken-for-granted notion, English's preeminence as the language of research and publication in these databases needs to be interrogated, especially considering contexts where it is a second, third or even foreign language (Kuteeva & Mauranen, 2014; Yallew et al., 2021). As much as English is lauded as the lingua franca bringing together global scientific communities, studies have shown that non-native scholars face linguistic, socio-cultural, political and economic disadvantages (Flowerdew, 2013; Hanauer & Englander, 2011; Lillis & Curry, 2010; Yen & Hung, 2018). Additionally, the epistemic implications of the dominance of the language in African contexts such as Ethiopia need to be investigated, engaging with renewed debates on intellectual dependence, the cognitive empire and decolonizing the academia and knowledge production in particular (Ndlovu-Gatsheni, 2018).

Conclusions

The present article set out to map the research publication landscape in Ethiopia. The findings suggest that productivity for Ethiopian-affiliated research is increasing. Strong representation of research from biomedical sciences and agriculture could be regarded as strength of the system. However, there is a significant underrepresentation of social sciences and humanities research on the one hand, and STEM research on the other. First-generation universities constitute the relatively dominant institutions in terms of levels of research productivity in pure quantifiable terms. When it comes to per capita research output, almost all first-generation research-oriented universities either slightly exceed or come close to one paper criteria per researcher. Even though they lag behind in the number of publications, the country's second and third-generation universities are also performing reasonably well given their limited research capacity.

The analysis of publication outlets suggests the need to enhance the representation of Ethiopian-affiliated journals to match the burgeoning research and publication function of HEIs. It is an encouraging development that MoSHE developed a list of nationally accredited journals. However, there is a need to harmonize accredited journals with an international accredited list. For example, Ethiopian journals accredited in WoS and Scopus are not officially listed among the 16 nationally accredited journals except for the Ethiopian Journal of Health and Development. In addition, to keep predatory publishing at bay, the Ministry stipulates those other publications should appear in journals indexed in WoS and Scopus. We suggest, however, that a more inclusive accredited journals database could be developed to acknowledge quality publications that do not appear in these databases. Not being indexed in these databases does not necessarily mean that a publication is of poor quality or is published in a predatory journal.

A few noteworthy statements could also be made regarding funding patterns. Though universities, through government funding, are still some of the most significant sources of reported research funding, the system is highly dependent on the US and European countries. Moreover, for nearly half of the publications, no funding was reported. Funding patterns also potentially provide clues regarding the dominance of biomedical, agricultural and life sciences research since the dominant funding agencies mainly focus on these areas. Though it needs further investigation, dominant research areas seem to follow the money and the priorities of dominant funders. To enhance research output, and promote autonomy and flexibility of setting research agendas, we recommend for the establishment of more sustainable national and institutional funding mechanisms, especially for those institutions designated with 'research university' status in the differentiated public university system.

With regards to languages, the complete dominance of English is noticeable. This finding is understandable given that the language is considered the lingua franca of global science. However, it could be deemed as concerning considering a contextual specificity where there are Ethiopian languages with the potential to be incorporated as viable alternative languages of research and publication. This finding, therefore, highlights the need to promote linguistic plurality in research publishing.

In conclusion, this overview of research output and productivity in Ethiopian higher education also indicates the need to systematically develop instruments, frameworks, databases, and research repositories for measuring and archiving research and publications,

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be it at the national or institutional levels. In terms of archiving research and making it available via open access, initiatives such as The National Academic Digital Repository of Ethiopia (NADRE) and the establishment of a national science information system (MoSHE, 2020d), and the Ethiopian Journals Online (EJOL), which was launched in 2014 and currently hosts 35 journals, need to be encouraged and expanded. Along with databases, the development of interfaces, searching, and analyzing tools is also crucial to enabling systematic and comprehensive access to research. Access to detailed, accurate, and publicly accessible academic staff data both at the macro and meso levels is needed to make analyses such as this one more nuanced.

Study Limitations

This study was conducted with a modest objective of providing an overview of research affiliated with Ethiopia archived in international databases. Therefore, no claims of comprehensiveness are made since the output from many Ethiopian journals may not be indexed in these databases and thus are not included, and unpublished research and graduate student's theses are not included. The other limitation is that this quantitative metrics-based overview also incorporates all the limitations that metrics-based analysis entails. While recognizing the insights in this bibliometric mapping, we would like to underscore that what we discussed in the present paper should be backed up with a more in-depth socio-historical analysis that also considers power relations and the transnational nature of global science (Marginson, 2021). As Marginson (2021, p.4) argues, between WoS and Scopus and scientific communities worldwide, "lies a long story of epistemic, linguistic, institutional, and political-economic power". The critique that Scopus and the WoS databases archive mainly English medium research from biomedical and natural sciences (Mongeon & Paul-Hus, 2016) also applies here. Because of these limitations, we do not recommend that the findings be used for strict comparisons and rankings.

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Acknowledgements

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Analysis of a Public School's Practices and Values through the Lens of Equitable Quality Education for All: A Case for Juxtaposing Schools and SDGs

Dawit Mekonnen Mihiretie (PhD)[a3] Tesfaye Ebabuye Andargie [b]

[a] Associate Prof., Department of Curriculum and Instruction, Addis Ababa University
[b] PhD. Student, Department of Curriculum and Instruction, Addis Ababa University

Abstract

This study examined the hidden curriculum of a primary school embedded in assessment practices and students' performance. Critical education theorists' arguments on education, social and cultural reproduction, and Bourdieu's theory of symbolic capital are used to inform the study. Using participative observer case study methodology, the study employed interview, observation, and document analysis to collect data. The participants (four students, two teachers and the principal) of the study were selected using purposive sampling. Thematic analysis was used to analyze the data collected from these participants. The results of the study revealed that school assessment techniques and students' achievement implicitly and explicitly communicate and institutionalize social stratification in the school which in turn considerably influences students' access to school resources, school leadership positions, and school communities' expectations on students. Students, teachers, and the school leadership, wittingly or unwittingly, are active actors in the implicit and explicit socialization process which reinforces values and practices that contradict equitable quality education for all. The findings suggest that policy and Sustainable Development Goals (SDGs) for equitable quality education should heed to actual school and classroom practices, and not merely be assessed based on data that are disaggregated along gender, rural and urban, or other social groupings. Unless global declarations are clearly operationalized and efforts are made to strengthen a continuum between global and national goals and school and classroom practices, utter dependence on statistical data on gender, location, and other indicators equity does not address ingrained challenges and opportunities for equitable quality education.

Introduction

Researchers in the field of curriculum studies suggest that students learn diverse values, practices, and interrelationships more from the deliberations, activities, interactions, academic works, rewards and punishment, hierarchy of power and logistics of educational contexts than the formal curriculum itself (Dickerson, 2007). This process of implicit and explicit learning and socialization has been conceptualized as 'the hidden curriculum'. According to Giroux (1979), the hidden curriculum is defined as the unstated beliefs, values, and norms that are transmitted to students through the underlying structure and meaning embedded in the process and structure of

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[3]**CONTACT** Dawit Mekonnen Mihiretie, email: dawit.mekonnon@aau.edu.et or dawit_mm@yahoo.com

the school and classroom life. The hidden curriculum of schooling is manifested through the various approaches to teaching, the selection and organization of curricular contents, the pedagogical and evaluation techniques, and the social interactions both in and out of the classroom (Giroux, 1983). The kind of reward and punishment, the organizational structure of the curriculum, the physical characteristics of the school, classroom and school power relations, and the physical school and classroom environment are also important manifestations of the hidden curriculum (Giroux, 1983). These characteristics constitute some of the dominant components of the school's hidden or implicit curriculum. Although these features are seldom publicly announced, they are intuitively recognized by parents, students, and teachers - because they are salient and pervasive features of schooling, what they teach may be among the most important lessons a child learns (Eisner, 1979).

Implicit messages and associated values and practices communicated to students in schooling have been a subject of thorough analysis and questioning, albeit in limited studies. According to critical theorists (Apple, 2004; Giroux, 1983; McLaren, 1994, 1995), teachers and schools do not always support student emancipation and development. There is a tremendous amount of power held by teachers and schools because of their ability to categorize children into various categories which coincidentally also reflect the school's and teachers' middle-class values (Apple, 2004).

Bourdieu's (1977) concept of symbolic violence also may help explain how institutions promote social inequality. Symbolic violence, also known as soft violence, functions largely within various forms of discrimination, which are often accepted as legitimate without question by the victim(s). It imposes meanings as legitimate by concealing the power relations which are the basis of its force. Symbolic violence can be more dangerous than physical violence because it is covertly installed within social structures and works to maintain the hierarchy of the classes. The overt nature of symbolic violence contributes to the reproduction and maintenance of social hierarchies because those hierarchies are unquestioningly regarded by the dominant and dominated classes as natural and legitimate.

Bourdieu and Passeron (1990) maintain that the possession of capital, primarily passed down from parent to child in the home, enables more affluent students to profit from the education system that recognizes, legitimizes, and rewards the socio economic, cultural and linguistic capital of the dominant class. Unfortunately, for members of non-dominant groups, possession of limited or the "wrong kind" of cultural capital may restrict access to opportunities and positions taken for granted by dominant groups, perpetuating inequalities.

Thus, educators must consider that socio economic, cultural, and linguistic capital may enable certain students to succeed while simultaneously causing others to fail. As influential agents in institutions that advantage some and disadvantage others, teachers must become aware of their role in perpetuating inequalities for students with limited socio economic, cultural and linguistic capital, both in and out of school. Bourdieu argues that cultural capital (cultural resources) is an asset of equal value to that of economic capital (material goods and resources) and social capital (social connections, networks and practices) in that it can be converted and utilized to acquire additional kinds of assets (Bourdieu & Passeron, 1990; Bourdieu, 1986,

2011). In education, the implicit curriculum dictates and inculcates the norms of conduct, cultural values, and beliefs that exist within the dominant school groups (Arive, 2008).

Most countries in the world stipulate in their education policy statements that their education system responds to the needs of diverse learners. Following the formulation of the Sustainable Development Goals (2015-2030) and specifically its fourth goal[4], countries have been working to improve the quality of primary education. The monitoring indicators for SDG 4 relate to how education systems (1) respond to gender equality; (2) improve the education of rural and marginalized students; (3) address the requirements of students with special educational needs; and (4) improve student performance in national learning assessments (United Nations, 2015).

To fully understand how education systems, schools in particular, promote the above indicators and ideas and how teachers, school leaders, and students absorb and process them, both the formal and hidden curricula need to be explored. Unless school values and practices are examined and uncovered in different educational contexts, they are most often accepted by students and teachers as parts of the normal school life and code of conduct. Some scholars also see the hidden curriculum as perpetrating the passive role of the students and hence causes them to be passive (Apple, 2004; Dickerson, 2007; Giroux, 1983). Without meticulous efforts to examine, reflect, and act to transform the socioeconomic forces that shape their destiny, marginalized students repeat the vicious cycle of violence and poverty that exists in their surroundings, thus committing the self-fulfilling prophesy of academic failure (Dickerson, 2007).

It is argued that global and national macro-level indicators on equitable quality education can be met when local actors and institutions cultivate schooling values and practices that promote equitable quality education. Research in educational change and reform indicates schools and classrooms are actual sites to assess the institutionalization of new ideas and practices (Jessica, 2012; Fullan, 2007). Macro global and national level targets and goals should effectively and coherently devolve into corresponding local interventions and practices if they are to impact the real lives and practices of teachers, district education, school leaders, students, and parents. The lack of proper devolution and tracking of teaching/learning, assessment practices, and school culture that enhance equitable quality education, will result in sustainable development goals which are not meaningfully realized or implemented.

This study explores how a school's assessment practice and students' performance affect access to the school's resources, influence students and teachers' expectations. It also examines the roles different school actors played in the construction of school values and practices that favor high-achieving students while putting the remaining students at a disadvantage.

Problem Statement

One day, one of the researchers' little sister, who was a primary school student in a private school, came to home with a very discouraging interpretation of a teacher's reaction to a question-and-answer session. The teacher asked a question and invited the students to respond.

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[4] *"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".*

The little girl raised her hand before the others. However, she was not given the opportunity to answer the question because the teacher gave the chance to another student. The student answered the question correctly and he was praised by the teacher and got a token reward.

The girl was truly angry for she had not received a prize even though she knew the answer. She came home and refused to play, to eat dinner, and to do her homework. Her family asked her to explain what had happened, but she refused to speak a word. Finally, she started to cry and began to yell loudly, repeatedly saying "It was *Ding Ding*". This expression was unheard of, and the family asked her to explain. She explained that "*Ding Ding*" is a kind of chewing gum little girls and boys used to chew in the school. It has a funny sticker under its cover that the students used to put on their hand or face.

What the family came to understand is that the teacher provided the chewing gum to the student who answered the question, that she had only one piece to give out, and that she had never given this reward to any other child. The little girl insisted that she had been frequently answering the teacher's questions, but the teacher never rewarded her with the chewing gum. She decided that she would never reply to her teacher's questions again, and 'that boy was the teacher's only genius'.

This event illustrates that critical anecdotal incidents have unintended, unplanned, and unconscious outcomes (Apple, 1980; Bowles & Gintis, 1976; Giroux 1978). Students learn a great deal from the unspoken, day-to-day activities and routine school practices that are often taken for granted. Without anyone saying anything explicitly, boys and girls learn lessons about their place in society, about how knowledge is transmitted, and about what things are worth striving for (Apple, 1980; Bowles & Gintis, 1976; Giroux 1978). This absorption of messages, beliefs and values is conducted implicitly through the hidden curriculum.

The above anecdote and the current emphasis on differentiating/categorizing students into different achievement levels in Ethiopian public schools and practices are the driving factors for conducting research on the implicit beliefs and values imbedded in the assessment mechanisms of one primary school in Addis Ababa. Differentiation/categorizing of students in the classroom needs to be researched as it is one of the ways in which implicit beliefs and values are embedded in the assessment of students' abilities. While the purpose of differentiation/categorization is to design instructional practices that meet the diverse needs of learners, it may have unintended impacts when categorizations are used to favor a certain group and exclude others from accessing limited resources. These contexts hinder the achievement of equitable quality education.

Ethiopia has more than twenty million students in primary schools (20,046,375; 10,654,351 female) (Ministry of Education, 2019). The gap between male and female net enrollment rate has decreased over the past eight years, having close to 8.3 percentage points in 2019. Nationally, pupil-section ratio is at 53 for grades 1-8 while the standard set for pupil-teacher Ratio is 50 at primary and 40 at secondary level (Ministry of Education, 2019). The education system is characterized by high dropout and repetition rates. Dropout rates at grades 1 and 8 were 22% and 16%, respectively, in the 2019 academic calendar (Ministry of Education, 2019). Repetition is highest at Grade 8 (7%), where students are required to pass the grade 8 regional examinations to successfully complete primary education. Students' performance in

National Learning Assessment (NLA) also shows the poor quality of learning in schools. The National Learning Assessment result carried out in 2019 shows more than 70% of the sampled students did not score the minimum competence threshold (50%) in almost all subjects at grades 4 and 8 (NEAEA, 2020). In fact, in grades 4 and 8, only one in five students (21%) and one in ten students (11%) scored an average of above 50%, respectively. These findings suggest that most of the students did not meet the minimum learning outcomes expected in these grade levels. This indicates that meeting expected learning outcomes is a luxury for many students in Ethiopian primary schools.

Fig. 1

Percentage of Grades 4 and 8 Students who Scored above 50% in 2019 NLA
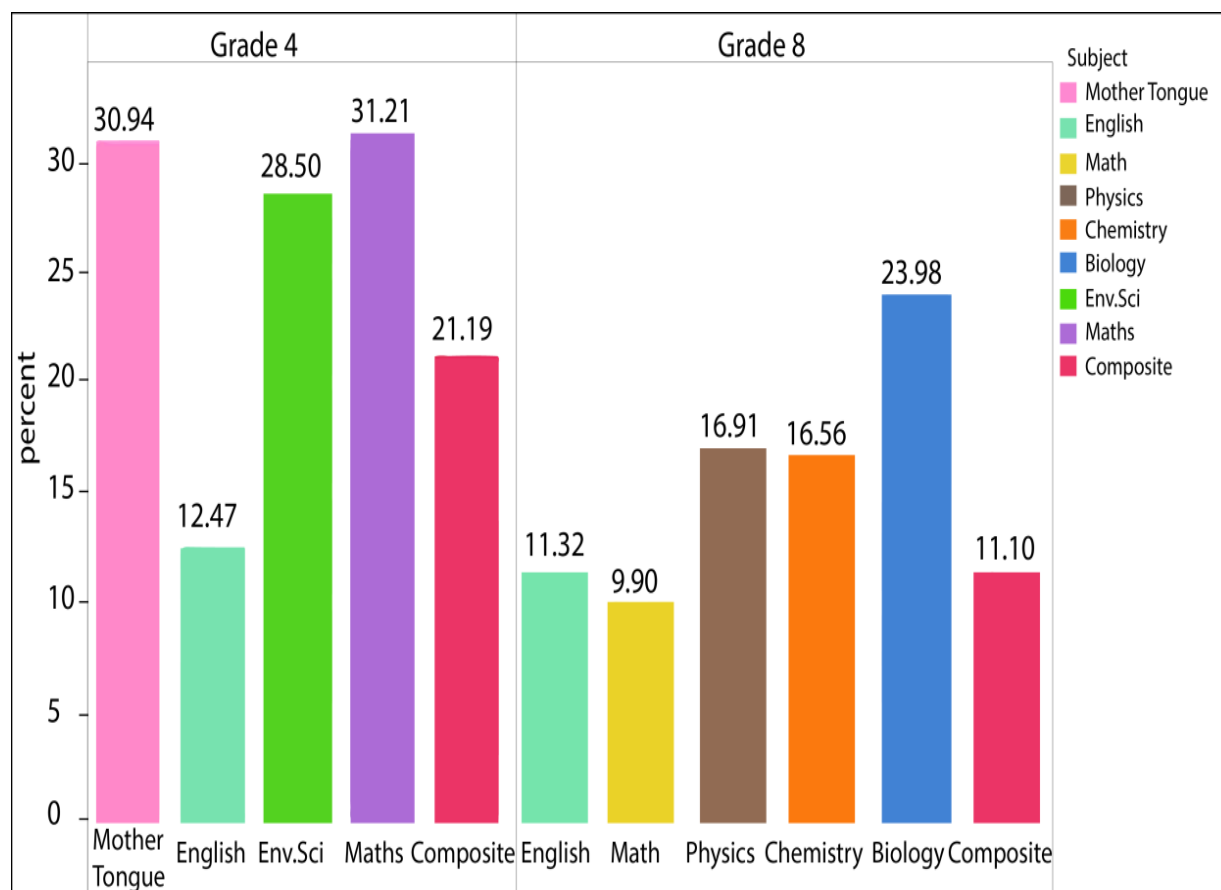
Source. National Educational Assessment and Examination Agency (2020).

The above Ethiopian context shows that the majority of school students do not meet expected learning competencies. The goal of quality equitable education can be met only when there are sustained and conscious efforts to address the low-learning outcomes in schools. School community members should be aware of this and cultivate a school culture could nurture most students to succeed in achieving learning outcomes provided they are meaningfully supported.

As already stated, the present study sets out to examine the hidden curriculum of a primary school embedded in assessment practices and students' performance. For this, purpose,

the following guide research questions were formulated. These were: (1) What are the implicit beliefs and values embedded in school assessment techniques and students' performance in the primary school? (2) How does the hidden curriculum serve the interest of the 'better achieving students' in the school? (3) What roles do students, teachers, and school leaders play in fostering or fighting against the instalment of values and practices that deter equitable quality education in the school? (4) How do teachers and school leaders manage scare resources to meet the needs of diverse learners?

Hidden Curriculum and its Operations

Educational practice in schools is not a value-free experience (Apple, 1980; Giroux, 1978; Bourdieu & Passeron, 1990; Bourdieu, 1986, 2011). Values are taught explicitly through curriculum, but also implicitly through the rules, regulations, procedures, and ways of relating to the school and classroom. The democratic teacher teaches democracy; the kind teacher, kindness (Anyon, 1980; Apple, 1980; Giroux, 1978). Teachers communicate beliefs and values that contribute to the reproduction of existing social stratifications and dominant hierarchies. Explicitly, they transmit cognitive skills such as reading, writing, and computations. Less obviously, schools pursue non-cognitive objectives - norms, values, and behavior patterns necessary for socialization of children to adulthood. Even though both the school and family play significant roles in the socialization of children for future life, the role of school can be considered by far more formal, specific, and structured (LeCompte, 1978).

However, some argue that schooling does not always offer equal opportunity for all students. Equity of opportunity for different groups has been violated through the creation of unjust and unequal access to knowledge and skills that provide access to reward and power (Anyon, 1980; Apple, 1980; Giroux, 1978). Similarly, Korth (2002) states that the hidden curriculum carries social injustice and inequality in such a way that there is gender inequality embedded in it and there is also power inequality and inequity of power distribution among students and teachers.

Since the hidden curriculum tacitly advocates beliefs and values supportive of the status quo, teachers are expected to reward students who conform to such beliefs and values, independent of their respective academic and cognitive potential. Students also learn how to be passive recipients in the face of authority. In the long run, they learn how to accept and live with their own powerlessness (Giroux, 1978; Bourdieu, 1990; Darder, 2011). Similarly, Astley (2004) and Thornburg (2009) argue, like other critical theorists, the hidden curriculum is a tool of social control used by schools to silence the voices of students and make them consumers and passive recipients of teachers' knowledge and labels. Consequently, students are made to conform, to not question, and not to participate as they struggle to live with the expectations of others being communicated through family socialization, educational processes, and work experience - both in the school compound and in society more generally.

As stated earlier, educational research needs to examine teachers and school practices if they promote equitable quality education - for education must deal with diverse interests and power dynamics that may affect the provision of equal access to school resources. This is even

so when educational resources are very much limited in developing country contexts such as Ethiopia. Hidden curriculum as a 'set of implicit messages relating to knowledge, values, norms of behavior and attitudes that learners experience in and through educational processes' (Skelton, 1997, p. 188) has to be a critical subject of study in a world which aspires for equitable quality education. Teachers' knowledge of hidden curricula enables them to engage in critical reflection on their teaching and their department policies (Pitts, 2003).

In line with this, Jennings (2008) draws on qualitative data collected at an American urban primary school to explore 1) what educators teach students about motivation and effort through high-stakes testing; 2) how students interpret and internalize these messages; and 3) how student hierarchies develop as a result of internalizing these messages. Jennings (2008) found that teachers attributed boys' failure to poor behavior and attitudes, while arguing that girls simply needed more self-esteem to pass the test. Most boys accepted their teachers' diagnosis of the problem. However, the boys who felt that they were already 'doing their best' and 'working hard' began to doubt that educational success is a function of merit and effort. She concluded that students learn about much more than the three Rs (reading, writing and arithmetic) through their experiences with high stakes testing.

Anyon (1980) used classroom observation, interviews with students, teachers, principals and district administrative staff assessment of curriculum and other materials in each classroom and school as a method of studying the hidden curriculum at five elementary schools. Further, she analyzed school work and assessment techniques from working class schools, middle class schools, affluent professional schools and executive elite schools. She concluded that the hidden curriculum of schoolwork is tacit preparation of children for their future career related to the process of production in a particular way. The children in these various school settings were exposed to and acquainted with different symbolic capital in the due course of their schooling. Differing curricular, pedagogical and pupil evaluation practices emphasized different cognitive and behavioral skills in each social setting and thus contributing to the development in the children of certain potential relationships to physical and symbolic capital, to authority, and to the process of work. The process and structure of schooling being manifested through the curricular and assessment practices create inequality among children with different academic performance and achievement level. Children labeled as low achievers are being exposed to symbolic violence manifested through discriminatory and exclusive treatments in such a way that they are denied of equal access to the school scarce resources and leadership roles. The process and structure of schooling favors the social capital of high achiever students which is academic performance.

Methods

Study Context

The current study was conducted at a public primary school in Addis Ababa city administration, Addis Ketema sub-city. The school was established in 2001 and has 1124 students, 96 teachers, 4 principals and 46 administration or support staff. The school runs preprimary, primary (1-6) and lower secondary (7-8) school programs. The majority of its

students are from a lower socio-economic background. As a result, many children experience severe food insecurity.

Some students live in the slum areas and reside on the street in small houses made of plastic and hard paper. Since the area is located around *Merkato*, the biggest marketplace in Addis Ababa, families lead their lives by engaging in daily labor, owning and running small Xhat/Chat, *Shisha* and alcohol shops. Some of the parents are also engaged in commercial sex work and bed renting. There is no comprehensive support system for the students, either from the community or the concerned government body. A school feeding program exists for those children/students who are in need of the service. According to the school principal, students who come from "X Kebeles" are considered the most deviant students in the school. The school administration suspects and accuses these students as being addicted to Xhat/Chat, *Shisha* and alcohol. They are also identified as students who do not dress properly. Consequently, most students who reside in "X Kebeles" have received warning letters and various reprimands from the school administration. According to the principal, seven teachers also violated the school's rules and received oral and written warnings.

The school has an ICT center, a pedagogical center, guidance and counseling services, a library, laboratory rooms, and 13 co-curricular clubs. Students have leadership roles in these associations and school clubs.

Participants

Table 1

Demographic Characteristics of Student Participants

Student Participants	Name	Grade level	Class Standing	Sex	Age
1	Student "A"	7	2	Female	13
2	Student "B"	8	1	Male	14
3	Student "C"	6	1	Male	12
4	Student "D"	5	28	Male	13

Two high performing grades 7 and 8 students were selected using concept-based sampling. Since the study needs a detailed justifications and understandings of the power dynamics and implicit messages embedded in the assessment techniques, high performing students were selected from the school. The school rewarded these students as the best scorers in the previous academic calendar. The president of the students' council was included in the study for he had an opportunity to participate in the school decision-making processes and inform the study on how the school's practices influence students' learning. By using maximum variation sampling, a "low achieving" student with a poor disciplinary record was included in the study. His record was found in the "blacklist" of the school that incorporates the list of students labeled as "disturbing and low achieving" students. The principal of the school was included in the study.

Table 2

Demographic Characteristics of Teacher and Principal Participants

Name	Education Level	Sex	Age
Teacher "A"	BA	Male	37
Teacher "B"	BA	Female	26
Principal	MA	Male	46

Reputational sampling (based on the principal's recommendation) was used to select the first teacher participant. The principal recommended a Civic and Ethical Education teacher since he is a long-term member of school assessment and exam committee (9 years) and has thorough information about school assessment mechanisms and student behavior. He regularly attends school level meetings and monitors exam preparation and administration in the school, examining exams, approving them for final delivery, duplicates and administers exams. Another Civic and Ethical Education teacher was chosen as a study participant. This teacher is believed to have deeper understanding of ethical values and concepts such as pupil voice, social justice, equality, democracy, equity, and critical thinking was included in the study.

Data Gathering Instruments and Analysis

Observation, interview, and document analysis were used to collect data. Creswell (2003, p. 196) recommends the triangulation of different data sources to build a coherent justification for themes. The study employed interactive (deep interview) and non-interactive (observation and document analysis) data gathering instruments.

The school, classrooms, computer labs, the principal's office, teachers' lounge, playgrounds, and students' rest rooms were observed to collect data about who the users of school resources, space, and time are. One section from each of grades 7 and 8 was observed, and notes were recorded on the beliefs and values embedded in the assessment practices and classroom interaction. Students' interactions outside the classroom were also observed and recorded on field notes and video recordings. The focus of the data collection was the language and terminologies used in their interactions.

Teachers, students, and the school's principal were also interviewed to explore their views on the different school practices and values associated with assessment practices and student achievement. Ten open-ended items were used for the interview. The interviews were individually administered and lasted on average 45 minutes and were conducted in Amharic. The interviews were audio-recorded, and notes were taken during the interview. Some relevant documents such as examination sheets and records, meeting minutes, and selected students' exercise books were analyzed using pre-established checklists and tabulations.

The interview data were transcribed and translated into English. The translated interview responses were coded into different categories by the researcher who conducted the interview. Words, phrases, and complete interview responses were used in coding the data. Then, similar

categories of responses were synthesized into themes. The themes emerged from the actual responses. The second researcher cross-checked if there was consistency in categorizing the coded responses and their alignment with the emerged themes. Data gathered from documents was interpreted and analyzed together with the interview and observation data. Data obtained from observation, included video-recorded data, were carefully and repeatedly watched, analyzed, and categorized into the themes that emerged from interview responses.

Results

The qualitative findings obtained from the observation, interview and document analysis data have been analyzed in line with the research questions. The coding, categorization and triangulation of data obtained from different sources resulted in the following themes.

Students' Achievement Considerably Determines Status or Privilege

Student interviews indicated that there is a social stratification of students which classifies them into different social groups. According to Student "B", "the school categorizes the students based on their achievement level as high achievers, medium achievers, and low achievers. And hence we are treated differently, based on our academic achievements in the school". Supporting this, the principal said the following: "we have made different categories of classrooms for the top ten, middle achievers, and the low achievers in our school to support the students based on their achievement level. We believe that this categorization enables the teachers to provide differentiated support that commensurate students' performance and ability.". Students are aware of this grouping and the corresponding differential treatments by teachers and the school. It appears that students' achievement and the resultant grouping is a major criterion to determine their status in the school. In line with this, student "C" reported the following.

> … there are different categories for the students with different academic achievements. The high achievers, usually labeled as the *Top Ten*, have their distinguished classes and the others, such as the medium achievers and the low achievers, have their own classes. The school perceives us differently and we have different entitlements as a result.

The principal also explained the issue at hand as follows:
> "If the low achievers attend their learning together with the *Top Ten*, they may feel hopeless and withdraw themselves from learning. This is an initiative to build the morale of our students and we have no problem with it. It is a successful strategy….".

The data obtained through school observations also revealed that students are grouped based on their achievement level during tutorial programs.

Achievement Determines Access to Different Student Leadership Positions or Power

Assignment to different positions is also influenced by students' achievement. High achieving students are mostly assigned as student council members, class monitors, school club leaders, student police members, and leaders of the flag ceremony. On the other hand, in most cases, medium and low achieving students are marginally considered for the above positions. In this regard, student 'D' had the following to say: "…we don't think deeply to elect our representatives in the students' council. What we do is to nominate a student who ranked from 1 up to 3 in the class…". The same position was reflected by student 'C' by forwarding the following opinion: "… Mostly I don't know who our representative in the students' council is. What I can be sure is that s/he is among the three high achiever students in the class…"

There is an unofficial and unstated norm that student council representatives should be from among high achieving students. This expectation also appears to be deeply ingrained among students themselves. Reiterating the above views, Student 'B' explained:

> Most of the time, the unit leader comes to the class and tells us to nominate a good and clever student who can represent us in the students' council. We know very well that the good and clever students are those who ranked from 1 up to 3. Therefore, we elect these students as our representatives.

The principal of the school confirmed the school's practice of selecting better performing students. He described the situation as follows:

> Most of the students and we [school staff] know who should be elected as members of the students' council, monitors, and heads of different clubs. No low-achieving student who is hopeless of his/her learning was ever elected as a member of students' council in our school

School document analysis and student observations too validated the school's deeply held belief that low-achieving students should be denied the right to be elected as leaders of clubs, monitors and members of students' council. The president of the students' council, the head of the anti-HIV club, the head of the Civic and Ethical Education club, the leaders of the flag ceremony, and school monitors are all within the top three students of their classes.

Document analysis of the school's extracurricular clubs, students' council, monitors, flag ceremony leaders, PTSA (Parent, Teacher, and Student Association) members, teachers' evaluation committee members, and ethics ambassadors also indicate that low-achieving students are not fairly represented across various student leadership positions. A document analysis was made on the list of students who were members of students' council, students' police, monitors, heads of different clubs, and leaders of the flag programs. The analysis shows that 60% of student police, 70% of class monitors, 100% of students' council, and 45.8% of club leaders are those students who are ranked between 1st and3rd in their respective classrooms. In addition, it was also understood that 70% of flag ceremony leaders, 100% of PTSA members, 60% of high-achieving students association (*'Yegobez Temariwoch Hibret',* an association composed of students who are ranked from 1st to 5th from 10 sections), 70% of class monitors association (*'Yealekoch Hibret'*), 100% of the ethics ambassadors (*'Yeinemigbar Mekonenoch')*, and 100% of teacher assessment committee were students who ranked from 1st to 3rd.

Student leadership positions are also significantly male dominated. It was found that 65% of class monitors, 75% of student police, 70% of student council, 75% of club leaders, 65% of flag ceremony leaders, 67% of PTSA members, 72% of high achiever students association (*'Yegobez Temariwoch Hibret'),*65% of class monitors association, 70% of ethics ambassadors and 70% of teacher assessment committee were male students.

In fact, these "high achieving" students are represented in multiple school leadership structures. For example, 100% of the class monitors are also members of the class monitors association (*'Ye Alekoch Hibret')* and leaders of the flag ceremony. Similarly, there was also high intersection between those who are members of '*Yegobez Aleka',* members of PTSA, ethics ambassador *'Yesinemigbar Mekonnen',* club leader, students' council, and class monitor. Most of the leadership and extracurricular positions in the school have been vested in the hands of few high achieving students. The school implicitly, at times wittingly, excludes most of the students by favoring few high achiever students.

Table 3

Hegemony of School Leadership and Extracurricular Position by Male High Achieving Students

Student leadership and extracurricular positions	No. of students whose rank is 1 to 3	% of students whose rank is 1 to 3	No. of students whose rank is 4 to 10	% of students whose rank is 4 to 10	No. of students whose rank is below 10	No. % of students below 10	% of male students
Class monitors	14	70	4	20	2	10	65
Student police	18	60	8	26.6	4	13.3	75
Student Council	10	100	0	0	0		70
Club leaders	11	45.8	7	29.1	6	25	75
Flag ceremony leaders	14	70	4	20	2	10	65
PTSA members	3	100	0	0	0	0	66.66
High achiever students Association	30	60	20	40	0	0	72
Class Monitors Association	14	70	4	20	2	10	65
Ethics ambassadors	10	100	0	0	0	0	70
Teacher assessment committee	10	100	0	0	0	0	70

School leadership and extracurricular positions are predominantly dominated by male high achieving students. 75% of the student police and school clubs are the male high achieving students. Besides, 70% of students counsel, ethics ambassador and teacher assessment committee are the male high achieving students. In addition to this, more than 65% of class monitors, flag ceremony leaders and members of class monitors association are also the male high achieving students.

Achievement Determines Access to Limited Material and Human Resources

Student interviews indicated that the school's scarce human and material resources are mostly utilized by high achiever students. In interviews, students of both high achieving and low achieving appeared to have been accepting this culture. They genuinely believe high achieving

students should get exclusive access to these resources. For instance, student 'A' described the topic under discussion as follows:

> We all know there is a scarcity of reference books in our school. However, most of the time students who ranked 1-3 in each section receive reference books from the library, with exclusive access. I believe this is logical because these students use books wisely and do not throw books as though they are mattresses, like most low achievers do.

Reflecting a similar view, teacher 'A' replied the following.

> The school has a scarcity of educational inputs like books and computers. Hence, high achiever students should not worry about this scarcity. Providing exclusive access to the reference books for the higher achiever students is logical … and we let them use the computer laboratory three days a week because we believe they will take the necessary care for scarce resources

Besides, the observation data obtained from the computer laboratory revealed that access was only provided to high achiever students who were ranked 1-10. These *Top Ten* students were classified into three hierarchically made groups. These groups could develop their computer skills and knowledge three days a week for two hours each day. No other student could use these computers in the school.

Table 4
Students' Access to Computer Labs

Day	No. of students ranked in the top three	No. of students ranked 4th – 10th	No. of students ranked below 10	No. of male students	% of male student
1	5	5	0	7	70
2	5	4	0	6	66.6
3	5	5	0	5	50
4	5	5	0	6	60
5	4	5	0	6	66.6
6	4	4	0	8	100
7	6	4	0	8	80
8	5	4	0	7	77.7
9	5	4	0	6	66.6
10	5	4	0	8	88.8

Table 4 presents the data obtained through document analysis of students who use the computer laboratory and their school achievement records. The data revealed the school's inclination to favor high achiever students. The list of students who have been using the computer laboratory was matched with their academic achievement. Analysis of the list of students who used the computer lab for 10 consecutive days in the academic year revealed that the school's computer laboratory served only the *Top Ten* students. Additionally, male students were provided priority access to the computer lab despite the fact that the computers were provided by an NGO with the aim to support school clubs and promote leadership and life skills. Since most of the club leaders are high-achievers and the leadership of the clubs itself is virtually controlled by these students, they have unlimited access to these scarce resources. In this way, the school tacitly promotes the unequal access to the scarce resources and inequality among students based on their achievement.

Such favoritism for high achieving students also informs the distribution of reference books. In Ethiopia, schools allocate textbooks for students prepared centrally by the federal and regional governments. Although the student-textbook ratio is desired to be 1 to 1, distribution and utilization problems mean that this is rarely the case. According to Student 'B':

> … Most of us do not use books properly. We simply received books from the school at the beginning of the academic year and yet return them in the end of the semester without using them. Hence, I believe that providing one book for one high achiever student is the correct measure….

In the same manner, student 'C' said the following.

> … Some low achiever students deliberately hide books from the high achievers when they are in the same group. Therefore, to prevent this from happening, I believe providing exclusive access to the reference books to the high achiever students is a wise measure…

Student 'D', however, opposes the unfair distribution of learning resources among students. In this regard, he had the following to say:

> …the school is not fair in distributing reference books. They [school leaders] are not right in giving high achievers exclusive right to use the computer laboratory. High achievers got one book for one student. High achievers got the exclusive right to use the computer laboratory….

Observations also revealed that students are divided into three major categories. The first category is named as "special class" which encompasses those students who ranked from 1-10 from each section. These students are also divided into three groups. The first group is made up of first-ranked students – this group has a 1:10 classroom-student ratio during examinations. The second group includes the students who ranked second – this group has a 1:10 classroom-student ratio during examinations. The third group includes those who ranked from third to tenth in each section - this group has a 1:35 classroom-student ratio during examinations. The second category

of students, which includes those who are ranked eleventh and beyond, have a 1:45 classroom-student ratio during examinations: 1:3 bench to students ratio, and 1:45 teacher-students ratio.
 This structure of teacher support during examinations indicates the prevalence of great disparity among students of various categories in the utilization of resources. Hence, there is clear discrimination in terms of low achievers' access to material and human resources in the school. Observations also indicated that most high achievers attend tutorial and school support packages more than low achievers because most low achieving students' parents could not afford the tutorial tuition fees. In line with this, teacher "C" reported the following.

> … most of the time, low achiever students are from low socio-economic status families (even by the school community's standard). Due to this, they cannot afford the money for after-class tutorial and academic supports. I observed that some teachers provide other supports for their tutees which are not legal in the school. You know, there are teachers who usually do exams and homework for their tutees…

Discrimination also underlies students' access to the most privileged skill and knowledge in the school. Supporting this, student 'A' had the following idea: "… I believe that low achiever students should not imagine that they will be able to learn a skill that is only reserved for special students…". The principal also believes students should be categorized in different groups based on their school achievement, and that different knowledge and skills should be delivered to students based on their school achievements. The following verbatim, taken from the principal, epitomizes this.

> …I appreciate the idea that students should be categorized into different groups and should be provided with different levels of knowledge and skills. It is difficult to imagine low achiever students could competently learn to use a computer. To perform this, we included this task in teachers' performance-based appraisals….

Quite similarly, teacher 'A' reflected the following position.

> We never let low achiever students to go to the computer laboratory. If we do that, they will disturb the high achievers. It is enough for them attending the tutorial program aimed at helping to develop their skills of English writing and reading. To your surprise, they are not interested to attend these tutorials. Only 5-10 students usually come

However, in contrast to the above idea, student 'C' believed "that there was no discrimination of students in terms of access to knowledge and skills". For this student, all students "learn from the same book and nothing else was done to provide different knowledge to different students in their school...".

Labeling and Categorizing Language: Manifesting and Deepening the Hidden Curriculum

It appears school community members label students into different social categories. Different labeling terminologies were used to describe and categorize the different groups of students. According to student "D",

> The *Top Ten* students are really doing very great in their academic issues. However, the *Seven Up'* are careless about their education and hence they cut class regularly… They cut all the seven periods of the day after being marked as 'present' on daily attendance.

On the same topic, teacher B said, "It seems I am working only to the *Qelemewa* (The Intelligent). I mean those students in the special class and yet most of the students are *Sholaki (The class cutter)* and become *Qarammi* (The scavenger) during exam sessions".

In the school under investigation, *Seven Up* students are perceived to be indifferent about their learning and achievement as they usually cut all the seven periods of a school day. They are perceived to lack the interest, motivation, ability, and skill to go through their daily school activities. Teachers appear to have an exceptionally low expectation and provide almost no support for the 'seven up' students. The school community perceives these students as problem makers and are categorized as risky groups to interact with. They do not have regular access to the scarce resources of the school including the computer lab and library. They are labelled as exam cheaters.

Sholaki students, on the other hand, are students who cut class after break time. They are also in a close control, auspices, and suspicion by the school community during their school day and yet the discrimination is not as tight as the 'seven up'. Teachers also seem they have low expectation to these students. They get much less school support during classroom instruction and exam weeks. They have no access to the computer lab and the library. The labeling and bullying of these students by the school community may have forced them to accept and act as per that categorization.

Coming to the *Qarammi,* they are students perceived by the school community as exam hijackers and cheaters. They are supposed to be low achieving students who believe in 'their cheating skill rather than academic effort. These students amplify the Amharic proverb 'ከአንድ አመት ጥናት የአንድ ቀን የአይን ጥራት' i.e., "an exam day eyesight quality is better than a full year academic effort". They use this as a strategy of survival in their school life. The school community has low expectation and provides very low school supports to these students. They are also under a tight and strict auspice in their school life by the school community including teachers, leaders, 'high achiever students' and sometimes with the surrounding community. They got no ample access to the scarce opportunities of the school being labeled as thieves, cheaters, and opportunist and unresponsive.

Finally*, Qelemewa* are higher achiever students perceived to have poor communication and social skills. They lack the social skill to access information and scarce materials and resources of the school. 'Low achievers' perceive the *Qelemewa* as they are not moody since they do not collaborate in exam cheating. The high achievers perceive them as they are not

socially capable to establish and engage in peer group interactions. Therefore, both the 'low achievers' and the 'high achievers' bully these students. To avoid these confrontations, they distance themselves from accessing resource places like recreation fields, library and computer lab.

Tutorial and Makeup Support to Low-achieving and Other Selected Students

Given the findings of the study dwell much on what is being done to meet the needs of better performing students in the school, an attempt was made to capture student support system for low-achievers. Tutorial and makeup classes are the techniques used to support students who need additional academic support. In the school, students are categorized into different groups for academic support packages. The beneficiaries of the tutorial and makeup program are students who scored below 50% (categorized and labelled as 'low achiever' students), all grade 8th students (116) and all students with special educational needs. The tutorial and makeup programs are conducted every school day from 7:30 AM – 8:30 AM and on Saturdays. There are no documents to verify the number of students labeled as low achievers and those who benefited from the tutorial and makeup programs except the number of grade 8 students.

Students' parents, based on mutual agreement with the school leadership, pay monthly 100 Birr to incentivize teachers who provide tutorial and make up support to the students. The school principal reported that student attendance in tutorial classes is good though there are not documentations to verify the extent of students' participation in the programs. On the other hand, a teacher who has many years of experience in offering tutorial and make up classes stated that

> …. student tutorial classes are based on selected difficult contents from student textbooks. However, both students and teachers' participation on the tutorial and makeup classes are not strong. Some students do not often actively attend these sessions because of family socio-economic problems and other related issues.

Students from lower socio-economic status and especially elder children are expected to support parents in household chores and other paid labor activities. The teacher also underscored that support programs are not as effective as expected due to 'low motivation of teachers to support these students.' Low incentives and students' limited participation in these programs contribute to teachers' low motivation. It appears, however, that teachers inflate students' scores in assessments conducted after tutorial and makeup classes so that they would not be held accountable for low students' achievement. This is an issue that requires further study.

Discussion and Implications

The findings of the study uncover how students' performance in teacher made tests virtually determine access to school resources and how school practices and community members, wittingly or unwittingly, favor academically well-performing students in availing limited scarce resources. Albeit the staggering poor results in early grade reading assessment (Only 19% of grades 2 and 3 are functionally fluent readers in 2021 EGRA, NEAEA, 2022) and

national learning assessment (NEAEA, 2020), top educational ministers and regional education bureau leaders' position and pressure to expand special boarding schools for well-performing students appear to rest on an over simplified thinking that cultivating the 'best minds' matters more for the country's development. This position does not only contradict the sustainable development goal of equitable quality education for all but also begs many questions if it is indeed the best way of cultivating students' potentials. Unless differentiation moves away from utter reliance on students' academic performance in teacher made tests and is broadened to include diverse talents, it is highly likely for the education system to fail to achieve equitable quality education for all and serve expected goal of transforming the Ethiopian society.

There is a toxic assumption that high achievement in teacher-made examinations shows students leadership capacity. High-achieving students have better opportunities to convert their academic capital into different leadership capabilities and social capital. The principal labels and categorizes these low-achieving students as 'careless', 'unmotivated', 'time-wasting', and 'less hopeful' in their academic life. Hence, these students are denied equal opportunities to take part in different school activities and assignments that foster decision making, collaboration and communications skills. The principal of the school also backs such practice and school culture.

Students' access to power is highly influenced by the beliefs and values embedded in the achievement level of students and the subsequent labeling and social stratification. According to Barbara Korth (2002) and Darder and Miron (2006), the hidden curriculum caries social injustice and inequality in such a way that there is gender inequality embedded in it and there is also power inequality and inequity of power distribution among the students and teachers that replicate the social construction of students as per the expectations of the macroeconomic reality in society. Students with high achievement levels are at the top of the social strata and get better access to material and human resources and the scarcest and most privileged knowledge in the school. On the other hand, low achievers in the school have been denied access to school power, as well as the scarce human and material resources. Both the high achievers and low achievers have been socialized to live according to their labelling and work hard to thrive or survive within this status quo. They believe that academic achievement matters most in getting to the top of the social strata or to the bottom of the social hierarchy in the school.

Similarly, McLaren (1990, 1993, 1994 &1995) stated that Schools are historical and structural embodiments of ideological forms reproduced through uneven informal alignments that privilege certain groups, and asymmetrical relations of power that sustain such privilege. It contributes to constructing, legitimizing, and reproducing particular ideologies and social inequalities in favor of people in power or dominant social groups. Since people in power usually have the authority to control and determine what is taught and how it is taught in schools and classrooms, students are frequently exposed to the discourses that reflect and naturalize the perspectives, worldviews, and ideologies of these powerful people and social groups. The discourses that students are frequently exposed to at schools not only educate them, but also subjugate and control them, and shape their consciousness. In line with this, Anyon (1980), Apple (1980), Giroux (1978) and other scholars in the political economy and the sociology of

knowledge have recently argued that public schools make available different types of educational experiences and curriculum knowledge to students in different social classes. In line with this, Gatto (2005) underscored that:

> The lesson of my teaching life is that both the theory and the structure of mass education are fatally flawed; they cannot work to support the democratic logic of our national idea because they are unfaithful to the democratic principle. The democratic principle is still the best idea for a nation, even though we are not living up to it right now. Mass education cannot work to produce a fair society because its daily practice is practice in rigged competition, suppression, and intimidation. The schools we've allowed to develop can't work to teach nonmaterial values, the values which give meaning to everyone's life, rich or poor. (p. 69)

Hence, in order to realize equitable quality education for all, it is imperative that policy makers critically examine the social reproduction role played by schools. In Ethiopia, most able and average parents send their children to private schools where there are small class sizes, better teachers, and more and better-quality school resources. In Addis Ababa, where this study has been conducted, non-government schools account 68 % of primary schools (Ministry of Education, 2019). Public schools in most cases attract those parents and children who cannot afford to pay the tuition fees required to enroll in private schools. While this is one form in which schooling in Ethiopia implicitly perpetuates social inequality, this study clearly demonstrates that student differentiation in a public school is used to favor those students who are performing well in school-based academic assessments. Those students who should have been supported based on their learning gaps are not only disadvantaged from gaining appropriate support from their teachers but are intentionally excluded from accessing limited school resources. Worse yet, these students are kept at bay from taking part in extracurricular school activities.

Unless such undesirable practices are uncovered and school community members are sensitized and make conscious efforts to do away with toxic cultures that favor the few, the goal of achieving equitable quality education remains elusive. It is imperative that global efforts to achieve equitable quality education pay due attention to micro-level educational practices that institutionalize student diversity responsive classroom practices. Monitoring of goal 4 of the SDG at the local and school level needs to pay attention to whether schools are providing equal opportunities for all students in different school activities. School-based assessment is meant to tailor the instruction to the needs of students; not to discriminately allocate limited resources to a select few favored students.

Moreover, this paper showed how language reinforces inequalities and explains different expectations for students. Achievement and students associated behaviors resulted in language that differentiates and categorizes students. Students and teachers repeatedly use labelling language during interviews. The frequency use of these words also shows how deeply ingrained these categorizations are in the school culture. Studies on school culture show that language use

is one major indicator of teachers' assumptions, values, and practices of an institution (Vang, 2006). If social injustice is expanded in schools, schools' accepted mission of serving equitably all members of society will be eroded. In this regard, this study found out that students accepted their identity as ascribed to them and used terms such as *'sholaki', karami, kelemewa, Qezafi, arfage, "sevenup", and "Sholaki.".* Good, as cited in (Greenburg, 2003), argues that teachers praise low achievers less often, criticize them more frequently, allow them fewer opportunities to answer questions, and give them less time to respond.

The above discriminatory and categorical languages are frequently used by both students and teachers. The principal also used the above phrases and words during the interview. The students also act in the school according to their categorized status. They seem to believe that these stratifications, status, and identities are always true and objective. In line with this, Tattum, cited in Thornburg (2009), suggests that adopting the vocabularies of teachers as a new category of pupil is created in our education system. Students accept the defining power of the dominant culture of the school. These stratifications and labeling play a significant deterministic effect in students' lives and aspirations. The categorizations are based on school-based tests which only measure students' (inequitably delivered) academic learning and yet are used to communicate to the school community members that those low-achieving students have no other options for success. Language also plays a structuring effect among students. These labels jeopardize students' desire to improve and exert effort in their learning.

National policy initiatives should carefully consider the relevance of new educational ideas and reforms. Efforts to improve the quality and relevance of education for high-achieving and gifted are at their infancy and students should further be strengthened. However, policy makers' dominant discourse to build special boarding schools for the 'best achieving students' (e.g., the Education Minister interview at national TV, https://www.youtube.com/hashtag/etv) need to be cautiously examined if it really would contribute to the betterment of the public general education system where the majority of students in rural areas and from low-income families attend schooling.

Although global efforts to improve access and quality of education have improved equity of educational access, efforts for equitable quality education need to pay due attention to school culture and classroom practices and values. National level data disaggregated along gender, rural and urban and other social indicators do not suffice to show the real and strong school culture that still favors the interest of selected students. As this study was conducted in a typical school where students come from families with low socio-economic status, the results should be cautiously interpreted. And yet, the case illustrates schooling in impoverished communities of Ethiopia.

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Challenges in Teachers' Practice of Values-education in Secondary Schools: The Case of East Gojjam Zone, Ethiopia

Aschale Tadege Emiru[a5], Amera Seifu Belayneh (PhD)[b], Solomon Melesse Mengstie (PhD)[c]

[a] PhD. Student, Dept. of Teacher Education and Curriculum Studies, Bahir Dar University
[b] Associate Prof., Dept. of Teacher Education and Curriculum Studies, Bahir Dar University
[c] Professor, Department of Teacher Education and Curriculum Studies, Bahir Dar University

Abstract

The main purpose of this study was to investigate the challenges in teachers' practices of moral values-education in secondary schools. To achieve this purpose, a descriptive case study design was employed. The data was collected from students, teachers, and principals, mainly through semi-structured interviews. Based on this, interpretational and reflective analysis was made on a narrative basis. The finding suggests that there were challenges that include students' perception on the benefits of present education, abandoned religion and false narratives in the curriculum, non-supportive school leadership, lack of exemplars in relation to the value systems, lack of unity among teachers in managing student discipline, lack of authentic assessment of learning, and poor parental support. As a result, teachers were unlikely to seriously take on values-education as part of their responsibilities. It is thus implicated that the challenges need to be confronted and resolved in collaboration with moral actors. It is also advisable to take challenges as essential opportunities for innovation, criticality, and professional development rather than consider them threats. Furthermore, we suggest that other researchers conduct investigations into such sensitive issues of the century.

Introduction

It has always been the demand of any society to get its members equipped with cognitive, affective, and psychomotor behaviors which are highly interrelated in real life situations. In this regard, UNESCO (1996) has put stress for the development of a whole person by forwarding four pillars of learning which include learning to know, learning to do, learning to be, and learning to live together. With regard to learning to live together, UNESCO recommended educational institutions to develop affective behaviors and social skills necessary for life. The affective behavioral dimensions are related to attitudes, feelings, emotions, and other social regards (Kuboja & Ngussa, 2015). This affective behavior depends on possession and realization

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[5]**CONTACT** Aschale Tadege Emiru, email: aschaletadege@gmail.com

of moral values which reflect common good that bind people to live together. Moral values are beliefs, principles, or ideals about what is right or wrong, desirable or undesirable, good or bad within a particular culture (Rokeach, 1970; Wringe, 2006). They affect our thoughts and feelings and guide our actions in everyday life (Leenders & Veugelers, 2006).

The development of moral values will help individuals to understand themselves, to have empathy and concern for others, and to discharge responsibility. That means educating moral values is fundamental for the development of moral character. Values-education involves educational activities conducted to provide basic humanitarian values such as respect, responsibility, justice, honesty, integrity, solidarity, tolerance, etc. (Katilmis, 2017) so as to produce citizens who apply fair treatment of others, demonstrate caring relationships, and practice virtuous behavior in general. It is intertwined in every school's activity toward development of morality and applies to all aspects of education to ethical dimensions of life (Thornberg & Oguz, 2013).

In ancient days, children were taught good habits by indoctrination and imitation of adults, who instilled shared values in them (Wynne, 1992). When formal education began, academic learning was merged with the learning of religious doctrines up to the end of the 19th century (ASCD, 1992). At the beginning of the 20th century, public schools increasingly adopted a secular form of values-education that emphasized student teamwork, extra-curricular activities, student councils, flag salutes, and ceremonies so as to teach moral virtues like honesty, self-discipline, kindness, and tolerance (ASCD, 1992). While such a values-education endeavor was popular throughout the first three decades of the twentieth century, it began to decline as the progressive movement and the advent of logical positivism recast values as dynamic, situational, relative, and improper for schools to impart (Titus, 1994). In the 1960's and 1970's, schools were again demanded to provide values-education based on values-clarification method which sought to have students clarify their own personal values (ASCD, 1992) and cognitive development approach which focused on the development of moral reasoning (Kohlberg, 1973).

In recent days, values-education is considered central and is provided through different strategies. It may be either through independent courses, integration of values in different courses, or both. As some countries provide values-education as a separate subject (Leenders & Veugelers, 2006), others provide values-education as an embedded part of all subjects, classroom management, extra-curricular activities, and other school culture (Leenders & Veugelers, 2006; Thornberg & Oguz, 2013). There are also countries that provide specific courses as well as integrated with all educational activities in schools (Maruyama, 2013; Zhao, 2005). We feel that provision of values-education only as a separate subject is not effective, and neither is it without having an additional specific curriculum. Effective integrated values-education is a way of doing everything in schools and beyond (Lickona et al., 2007). Thus, every curriculum, pedagogical strategy, staff behavior, and school-wide activities must include essential moral values, and all teachers should create opportunities for students to learn them (Curko et al., 2015; Leenders & Veugelers, 2006). Teachers` dispositions are important keys in coping with challenges and shaping their students' learning motivations (Thomas, 2013). Based on this theoretical

framework, the study aims to investigate the challenges and their effects on teachers' dispositions toward integrated values-education practices in the context of secondary schools in Ethiopia.

The Research Problem

In Ethiopia, character development in young people was fostered via close relationships between the youngsters and adults in ancient days. In such an indigenous education system, the country has preserved and promoted essential cultural and moral values. After the introduction of Christianity and Islam, religious education has become common to inculcate the fundamental virtues of society. As noted by the literature, religion is the source of moral obligation and is a foundation for moral education (McNamara, 2015; Swan, 2018). It has a vital influence on our behaviors (Karbo, 2013) and is used as a means of safeguarding public morality, thereby nurturing young people capable of living together (Williams et al., 2008).

Since the introduction of modern education, the imperial regime had been providing values-education in the form of a separate subject called *Moral Education,* which was equated with religious education (Fenta, 2007; MoE, 2006). Although those moral lessons were predominantly influenced by religious teachings, citizens who had a chance for the then modern education were equipped with knowledge of respect for social norms and moral values of the time (Fenta, 2007). After the downfall of the imperial regime and the replacement of the military government in 1974, the state and religion were separated because of secularism. The government removed religious contents and introduced values-education in the form of *Political Education* to inculcate its ideology (MoE, 2006). The formal religious and moral education has been isolated from modern government schools since then. In its principle, secularism constitutes equality of respect, freedom of conscience, state neutrality towards religions, and separation of church and state (Maclure &Taylor, 2011).

Following the military government's fall in the early 1990s, the current ethnic-based federal government has replaced the former *Political Education* with *Civic and Ethical Education.* The new curriculum, which has been working for the last three decades, includes eleven fundamental values that recur across grade levels with the necessary details: *democratic system, rule of law, equality, justice, patriotism, responsibility, industriousness, self-reliance, saving, active participation, and the pursuit of wisdom* (MoE, 2007). As stated by the Ministry of Education, these core values have been mainstreamed in other academic subjects and extracurricular programs. In order to inculcate the values, civics and ethical education clubs have been established, followed by the preparation of an implementation manual. A guideline was also created to get stakeholders involved in instilling these civic and ethical ideals (MoE, 2007). Teachers, principals, supervisors, parents, and the greater community all have roles to play in this framework. In this way, the country's value-education system appears to take an integrated approach at the policy level.

In real context, however, this value-based program has been found to be less effective. Various local studies have revealed that the *civics and ethical education* subject did not result in the required civic and ethical behavior (Dawit & Haftu, 2012; Mulualem et al., 2017; Mulugeta et al., 2011). Dawit and Haftu (2012) conducted content analysis on the subject and came to the

conclusion that the effort is more likely to deepen students' ethnic identity than their national common identity. The qualitative case study conducted by Mulualem et al. (2017) on the implementation of a single primary school revealed that the subject did not bring the desired change on the part of students. According to this finding, students were observed to exercise their rights ignoring their moral responsibilities. Similarly, Mulugeta et al. (2011) conducted a study on the effectiveness of civics and ethical education with a focus on primary and secondary schools and reached the conclusion that it did not produce the desirable behavior due to lack of resources, theory-practice gaps, and absence of stakeholder cooperation.

The above research undertakings focus on the status of the implementation of civics and ethical education and its challenges as a separate subject. They did not treat the potential challenges of teachers' values-education engagements in an integrated manner. Behind these researches, it seems like a common assumption that a formally structured, explicit special course in values-education is sufficient to produce desirable moral character. Furthermore, our lived experiences tell that many have currently evolved into unethical character traits such as individual or group selfishness that will lead to humanity's extinction on the basis of ethnic and religious affiliations. Thus, we have been initiated to investigate the challenges on an integrated values-education with particular reference to one secondary school in East Gojjam by raising the following guiding research question: What challenges do secondary school teachers face in their attempts to participate in values-education?

Methods

Research Approach

Our reading suggested that there are two main corresponding research approaches named as quantitative and qualitative. The quantitative research approach is based on the logical-positivist whereas that of qualitative research is on the interpretive paradigms (Best & Kahn, 2006; Ezzy, 2002; Hancock & Algozzine, 2006). Unlike the quantitative, qualitative study admits subjectivity and focuses on developing themes from the data collected (Creswell, 2012; Cropley, 2019). The nature of the problem in this investigation demands such kind of qualitative approach so as to get detailed information and understand challenges on integrated values-education. We have employed this approach to gain insight into the views of teachers about the challenges through collection of qualitative data from different key sources.

Research Design

In order to investigate and deeply understand the challenges teachers face on the practice of values-education integrated with their professional engagement, descriptive case study design was considered to be helpful. In order to have full picture about the teachers' views, it was our preference to undertake the research on one secondary school. Case study is essential to explore multiple truths or realities about and to have an extensive description of particular unique cases (Yin, 2009). Through case studies, researchers hope to gain in-depth understanding of situations and meaning for those involved (Creswell, 2012; Hancock & Algozzine, 2006). Since descriptive

case studies are set to describe the natural phenomena, our goal was to describe the data as they occur (Zainal, 2007).

Data Sources

The data sources were teachers, principals, and students. Academic subject teachers were the major sources of information about their views regarding the challenges they encountered in values-education integrated with their respective subjects and overall activities. Teachers of civics and ethical education were sources of information to reflect their views about the overall practices of teachers and the challenges on moral values-educational activities. Data were collected from principals regarding the judgment they have about the challenges. Students were also considered as the sources of data about the challenges their teachers face in trying to inculcate moral values integrated with their professional practices.

Sampling

It is believed by qualitative case study researchers that knowledge and theories are developed only for that particular setting. It is not always generalizable due to small sample sizes and the subjective nature of the research. The main purpose of case study is to gather data from relatively small samples and provide a micro view of whatever issues examined. For our study, purposeful sampling was preferable to select the research site and participants (Suri, 2011; Flick, 2009; Best & Kahn, 2006). Deshet Secondary School (DSS) was chosen for this investigation because it is a full cycle, has a wealth of experience, and has a large teacher and student population. It was selected as an instrumental case to obtain a more thorough understanding of the challenges on integrated values-education.

The principal was considered as a key informant in many respects. Teacher participants were selected in consultation with the principal and then using snowball techniques, by considering experience, resourcefulness, genuineness, and information-richness. Students were taken from grades eleven and twelve because we believed they had better experience of the school's moral culture than those of the remaining grades. And they were selected with the help of unit leaders and homeroom teachers on the basis of expressiveness and genuineness. Therefore, there were one principal, one civic and ethical education teacher, three other academic subject teachers, and six students.

Data Gathering

The major tool of data collection in our study was semi-structured interview from which specific questions were emerged during the discussion. The data from interviews consist of verbatim or direct quotations from people about their experiences, perceptions, opinions, feelings, and knowledge with sufficient context to be interpretable (Patton, 2002). It tends to be seen as involving the construction or reconstruction of knowledge more than the excavation of it (Mason, 2002). To conduct a successful interview, we have identified key participants related to the research questions, developed interview guides and means for recording the data. The interviews with the staff and students were conducted on a face-to-face individual and group

bases respectively as supported by Mason (2002). Based on the consent of the interviewees, we recorded the talks in an audiotape, thereby transcribing them carefully.

Data Analysis

Qualitative research is grounded in a philosophical position which is broadly interpretivist in the sense that it is concerned with how the social world is interpreted, understood, experienced, produced or constituted (Mason, 2002). The qualitative case study depends on data analysis characterized by explanation of deeper meanings and understandings through the subjective views of participants (Akinyode & Khan, 2018). Creswell (2012) noted that it is fundamentally interpretive which includes developing a description of an individual or setting, analyzing for themes or categories, and finally making an interpretation or drawing conclusion. Huberman and Miles (1994) also stated that once actual field notes, interviews, tapes, or other data are available, data summaries, coding, finding themes, clustering, writing stories, and so on are activities in qualitative data analysis. One cannot escape from the personal or subjective interpretation brought to qualitative data analysis (Creswell, 2012). The qualitative data analysis depends on an investigator's own style of rigorous thinking, along with the sufficient presentation of evidence and careful consideration of alternative interpretations (Yin, 2009).

In this study, the collected raw data were organized and then categorized into different themes using coding strategies. The themes were then discussed in the context of the participants' perspectives by using interpretational and reflective analyses. By interpretational analysis we mean examining the data to find constructs, themes, and patterns. In a reflective analysis, we have relied primarily on intuitions and judgments to evaluate the phenomenon being studied (Gall et.al, 1994). The data analysis in this investigation was conducted manually as it was not beyond our control and managerial scope to demand software application. The findings were discussed in light of the available literature and professional views of the researcher thereby making generalization from the themes about the phenomena in question. Lastly, we come up with scholastic interpretations and understandings beyond what the data says (Amera, 2016).

To strengthen the reliability and validity of the research, attempts have been made through different enhancing mechanisms. At the stage of data collection, we started sort of interpretational analysis integrated with the process of data collection. At the stage of data analysis, we have exerted efforts to enhance the rigor through quality description of the meanings, feelings, and interpretations of participants. More specifically, we tried to ensure trustworthiness through purposeful sampling, member checking, thick description, expert review, and transparent in reporting of the findings.

Ethical Considerations

The participants of the research have the right to be informed about the nature of the research and kept securely confidential (Punch, 1994). After getting school permission from the principal, we presented the written consent agreements for the selected participants regarding the purposes of the research, the right to withdraw from the study at any time, and the techniques for

maintaining their privacy and confidentiality. To minimize potential risks faced by the participants, identities and locations of the individuals were hidden and data collected was held in anonymized form. That means we used pseudonyms not only for participants but also for the schools during the analysis and discussion work of the study.

Results and Discussion

This section presents the experience of one secondary school (DSS) to demonstrate the challenges teachers are facing in their attempts to participate in an integrated values-education. The challenges mentioned by the participants are found to be problematic in the teaching of academics in general and moral values in particular.

Perceiving the Present Education as Worthless

Participants reported that one of the major challenges is related to the students` perception about the current benefits of education. Participants of the study commonly explained that there is no attractive future to enable the students to be enthusiastic in learning. Tamene, one of the English teachers, told, 'If they see attractive future, they will exert high mental effort; nothing will stop them. They will go forward challenging whatever the barrier.' This reveals that the benefit of education after completion was not directly visible for the learners. The students perceive that there was lack of job opportunities after graduation. On the other hand, the students see their teachers poorer than the non-educated people. In this condition, Tamene believes that it is difficult to motivate the students to work hard in their academic engagement. Inherent with this, the efforts of moral and ethical education will be more challenging for the teachers. He said:

> …In my attempt to be a model in dressing for example, I do not have sufficient cloths. I am a person poorer than many of the students. If the teacher as an educated person is not better than the student in economy, how could education be attractive? Where is the benefit of education in this perspective? (Tamene)

Tamene is bothered about his dressings due to the scarcity of finance. He has no alternative cloths to wear and to be model for the students. He seems to feel inferior being economically not wealthy. Furthermore, the students are experienced with the presence of wealthy people without the modern education. If it is weighted with revenue, being educated may be annoying for learners and grownups. In this regard the students may feel that education has nothing to do with personal economic life. This kind of mentality hinders the students to exert high mental effort on academic activities. At worst, it is a challenge for teachers in their efforts of moral character building. Academic disengagement will add a burden on the process of shaping morality. Here, it would be advisable for teachers to ascertain with their students that an educated man can be economically wealthy with enlightenment while uneducated people become wealthy haphazardly and blindly.

Similarly, one of the civics and ethical education teachers, Debasu, witnessed that the teachers could not see academic courage on the part of students because of different factors. He said, '…. Students express that they want to finish 10th grade and become a driver or policeman.

They do not want to be pressured by their teachers. If we hold them tightly, they will end up in conflict with us.' From this expression, we can see that there seems to be an assumption on the part of students that they are not able to attend university. Here it would be good if they wanted to finish school and get a job as a police officer or driver. But it is a moral problem to think that these jobs do not require academic courage and quality learning. In this case, misbehavior would be likely to happen, and it would be challenging for teachers to build moral character. Therefore, teachers need to take a position that they can affect student motivation in ways that facilitate learning (Svinicki, 2005).

The Curriculum Abandons Religion and Promotes False Narrations

Curriculum-related challenges are impeding factors for teachers` engagement in teaching values in schools (Jie & Desheng, 2004). According to the participants, the detachment of religion from the present curriculum has made the efforts of values-education difficult. Being informed by his rich experiences, one of the teachers, Areya, told that the value system of the past was by far better than that of the present. In his words, he stated:

> In the generation we had passed through, respect and responsibility were typical cultural values. We used to respect our teachers, the education system, and the school. This in turn led teachers to care for students and be responsible for teaching at the expense of that moral practice. Therefore, the teacher student relationship was based on respect and responsibility. We cannot see this kind of morality at these days. Civics and ethical education, which was trusted to bring up morally excellent citizens, paradoxically made students to exercise their rights and neglect their obligations. Unless and otherwise there is rethinking and the situation is reversed, it will be hazardous for our country to survive even as a nation. (Areya)

The verbatim here shows that respect, responsibility, and caring were crucial virtues demonstrated in every interaction of the then school community members. There was mutual understanding between teachers and students in the past. One was doing for others in the sense of return for good deeds. That golden era had become fable and history. In his closing, he ascertained that the generation is in danger if it continues this way. Tamene, who is also known for his religious knowledge and experience, expressed his feeling that the current education system and its curriculum have brought about destructive behavior. He has some reflections as,

> The education system of our country has brought several complications in terms of ethics and morality. Moral education has been detached from the education system by the name of secularism. Accordingly, students are deviated from the accepted traditions, religious practices, and moral culture of the society. We have seen them to violate essential cultural norms by the name of rights. I am doubtful that civics and ethical education curriculum is talking about ethics and morality. Had it been so, we wouldn`t have seen such crises of ethical behavior. (Tamene)

As indicated in the vignette here, Tamene expressed his grief in that the crises of ethics and morality are resulted from the principles of secularism implemented by the government. To put his view in simple terms, enlightening virtues were omitted and shedding vices have been promoted. The separate course affiliated with the ethnic-based federal government has dissociated the grownups. Essential moral values have been gradually excluded from the social system. They are not regarded as the guiding principles of human actions in the present scenario. This has become a challenge for teachers to moralize students which in turn resulted in moral deterioration from time to time. Neglecting role of religions is a critical challenge in the efforts of integrated values-education (Lickona, 2006). We thus feel that it could have been possible to include contents that cross different religions.

Apart from marginalizing religion, the present curriculum has encouraged the spread of false narrations. Subjects like history and civics and ethical education were considered as key instruments for shaping the generation. However, participants claimed that what happened is the opposite. Tamene felt that these subjects were less supportive to shape the generation. He said that civics and ethical education has resulted in a generation celebrating rights and ignoring responsibilities. It has inculcated ethnic based values than national ones. When we come to the system of history education, it became even the cause for the erosion of essential common moral values in the country. The discussion made with the students in the group interview suggested the following:

> …If we take grade ten history textbook, a narrative about Emperor Minilik discusses the expansion movement as humiliating other ethnic identities rather than conveying message about unification. How could the so-called humiliated people feel about this event? In general, we feel that curriculum was intentionally designed to break the generation and bring fragmented society. (Group interview with students)

When we look at the verbatim here, history as a subject has played great role in the destruction of national values. Separating values were inculcated and common bonds were eroded by the subject. As a consequence, the generation has been confused with false narratives. That is why we see the fruit at the moment. The country has become home to the development of stereotyped behavior at best and feeling of resentment and revenge at worst. Therefore, it would not be easy to reverse this. It would be hard to teach the truth while the formal curriculum has preached something else. That would be very challenging for the development of pro-moral character.

The impact of false narratives could be associated with the absence of peace and security in higher institutions. Tamene extended expressing his idea that these are basic challenges that block students` motives which in turn resulted in disciplinary problems. He has words to say as follows:

> Last year (2019) one of the slogans in the peaceful demonstration made by our students about the chaos that happened in different universities of the country was 'You do not have to be afraid of being arrested! There is a possibility of attending university!' They did this since they saw the reality. The secondary school students

saw university students being hammered like a snake, thrown down from upstairs like dirt, stoned to death like a beast, slaughtered like a bull, and chopped like a tomato. How shall I motivate them to study hard and join university with this situation? Because they are experiencing the reality, I am afraid that they will consider me even as liar. (Tamene)

As boldly presented by Tamene, one of the major challenges facing students in their academic learning and moral development is the security situation at universities. The students are not mistaken to raise this strange slogan to show that joining university is worse than joining jail. It is a disgrace that universities are the source of disintegration when they are supposed to be the source of unity, source of destruction when they should be the source of wisdom. It is a shame that they have become the laboratory for troublemaking when they had to be problem solvers. This destructive behavior was the result of false narrations. In this case, Tamene was right, saying that there was no reason for the students to have motivation for excellence in the line of universities. If he attempted to initiate them to join universities, he would feel that it was like he had pushed them to die.

Lack of Exemplars

Profound character development will be facilitated if there are good role models. Noddings (2007) contended that we do not merely tell them to care and give them texts to read on the subject; we demonstrate our care in our relationship with them. It has been frequently discussed so far that the present civics and ethical education system has been preaching students to develop desirable citizenship behavior. However, the students in the group interview session explained that people exercise individual rights and abandons responsibilities for others. One of the reasons is the practices opposite to what the students learn at their school. This rhetoric-reality gap can be justified by the following vignette extracted from the discussion we had with the students in the group interview:

> … We are not practicing what we learn in civics and ethical education. We have knowledge of values in theory but have not realized them in our action. This fact is also true in our school culture, government bureaucracies, and the community at large. What we see in reality is the opposite of what we learnt in the classroom. For example, Article 19 of the Constitution articulates how to handle the human rights of arrested criminals. However, the security and regulatory bodies are observed to be violating basic human rights in a heartless manner.

The verbatim shows that there are practices opposite to the theoretical lessons in the class. The people in the different government organs and community structures are weak in demonstrating positive role model for the students. The school teachers are not committed to perform teachable moral activities. The different authoritative figures in various sectors of the government are failing to be exemplars in their moral behaviors. There is nothing beyond human rights; however, rule protectors themselves are violating hardheartedly. The theory is one way; the practice is another way. The constitution itself is not respected let alone other moral

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principles. If the leaders are not guided by the constitution, no one (follower) will be guided by their rhetoric. In this situation, we can say that the students are subjected to know the good in the milieu of devilish practices.

The other manifestation of the theory-practice gap is that people of the contemporary era are seen to focus on their personal interests. They are hunting for private business at the expense of public needs. One of the students in the group interview put, '…authorities and experts of the present government are business-minded ignoring public needs.' From this expression, they seem to put themselves dominantly in the circle of their personal matters. It would be likely to say that they have fewer tendencies to do good deeds for others. This further implies that they are less likely to be modeling relational values for the learners; they are modeling individualistic personality.

According to the interview report from the school principal, Mamaru, there are many students who do not take their teachers as a role model. He complained that they are being captivated by the realities outside of school. In his words,

> …Teachers are teaching values not only by telling but also through their interaction with students, their dressing style, and other model behavioral characteristics. In this regard, my evaluation is that most of them are not bad models. For our teachers, improper modeling in terms of dressing style and personal demeanor is not a major problem. They attempt to be careful. However, the students are not ready to take their teachers as a model. They are under the influence of outside environment. Whatever best ethical practice might the teacher demonstrates in the school, it is very rare to get students who look into his quality. (Mamaru)

At the level of his understanding and belief, the principal tried to explain that there are various ways of teaching values among which modeling is the one. Many scholars also believe that teachers should be exemplary in their behavior. In practice, however, it is clear that there are no problems with dressing and personal disposition on the part of the teachers. He tried to explain that they were trying to be good examples in this regard. But his expression shows that it is hard to find a student who attempts to take a teacher as his/her role model. The students are not impressed even though the teachers are good role models.

Non-supportive Leadership Practice

Good character is fostered by orderly schools and classroom environments and by clear rules which are fairly enforced (Titus, 1994). The inconsistent practice of teachers and the subsequent response by the leaders to their performance were the main challenges that block the development of morality in the case school. For instance, the issue of tutorial was believed to be the teacher`s moral obligation. When it became component of result-oriented checklist, it would be binding to be controlled by authorities. In this case, implementation tends to be nominal; the checklist has made teachers to go to the opposite and unproductive performance. Many teachers are found to be running to collect fraud documents targeted to performance appraisal. On the other hand, Tamene complained that there were teachers who provide tutorial but did not

habitually report. There were also teachers who work hard but not praised. That means the teachers are not uniquely treated as per their excellence. He said,

> …Their target is mainly helping. These kinds of teachers are not hunted…. In general, there is no mechanism of identifying and incentivizing best teachers. There is no system of identifying ineffective teachers. This condition made the teacher to be less motivated, to miss or partially miss class periods, and to be far from school level engagements. (Tamene)

There is no lesson giving measure when teachers make mistakes. There is no system of appreciation when teachers are smart in their performances. In this scenario, best performing teachers and the ineffective ones are not treated differently. This will be demotivating teachers to perform their duties and exercise their moral obligations. Therefore, such absence of appropriate reaction by the authorities will make education in general and values-education in particular more difficult.

The other leadership-related challenge is the gap in their relationship with the teachers. According to Tamene, there was no synergy between teachers and administrators; there was social distance among them. Sometimes, teachers were not trusted by the leaders. During the interview session, he shared his experience as follows:

> … Once upon a time, I was teaching a topic called "Traditional Cloths". To make my lesson meaningful, I entered the class wearing traditional clothing. The principal of the school opposed the fact that I was not secular. I tried to convince him, but he insisted on his position that the dressing was a reflection of the Christian religion. (Tamene)

Tamene was trying to teach traditional clothes in practice and was making an attempt to make his lesson live, according to this vignette. However, the principal suspected that he might oppose secularism and promote Christianity in the classroom. Whatever argument Tamene suggested to persuade the principal as it is a teaching aid; the principal has shown less willingness to accept his justification. This indicates that the teacher has not earned the principal`s trust. Effective leaders, according to Covey (2004), should have smart trust in their workers and followers. Teachers are expected to have a moral obligation to do the right thing. Teaching is a moral practice (Pring, 2004). Once they are trained and licensed, teachers are to be trusted by their leaders. If they are discouraged in this way, the teachers will keep silent about the essential moral values and cultural practices.

As it has been frequently articulated so far, teachers are expected to involve in the process of discipline management and values-education as a whole. This will be effective if there is synergy between the teachers and school leaders. In relation to this one of the civics and ethical education teachers, Debasu, has complained that when a student is caught with misconduct, teachers may take their own measure but reversed by school leaders. He has shared one experience on an encounter to justify his argument:

> …This year, I faced a student holding construction metal (tubular) and wanting to take it away. When I asked him to put it away, he confronted me as if he had the right to

make it his possession. In the meantime, he attempted to attack me. Subsequently, I took him to the principal for further action. However, the principal advised him to ask me for an apology without taking the expected measure. Even though I was appreciative of the apology, I was offended by the principal's decision. Many students and teachers were observing the incident. They were expecting a serious step to be taken. From that point onwards, I became reserved for this kind of engagement. How could other students get disciplined when they saw this scenario? What lesson will they learn? How could other teachers try to regulate misbehavior? (Debasu)

In the first thing, the student tried to steal the school`s property. When Debasu tried to correct this misconduct, the student has rejected the decision of the teacher. That means he has shown an inclination to continue with his theft. In the second place, he tried to attack the one who attempted to interfere with his theft. That means he was not ready to learn from mistakes, rather he considered the teacher as mistaken. The third point is the solution given by the principal. Even though the student was made to ask an apology for the mistake, Debasu was not satisfied with the principal`s decision.

The multiple offensive acts of the student were not to be passed in that easy way. This discouraged the teacher to participate in discipline management. The other teachers who observed that scenario might also be less engaged in the efforts of discipline management and values-education as a whole. This kind of teacher-leader relationship is not constructive for teaching ethics and morality. Prior to notifying the decision for the student, the leader would have to make private discussion with the teacher in order to capture his genuine agreement.

The other management-related challenge was the physical environment of the school. According to our observation, there was no staff lounge for teachers to refresh. There was no television to watch and enjoy. There was no recreational center and game zone. There was no place and comfortable seat to take rest when getting tired of work. These aversive environments, we think, made the teachers not to stay in the school. They come to school for covering their class periods and run out of the school to enjoy their private dealings. All these things we observed revealed that there was no attractive physical environment for the teachers to spend their time in the school and celebrate their caring relationships among each other. The absence of these facilities, we felt, added fuel on the problem of existing social distances. In general, there was lack of effective leadership in the school. This finding is consistent with the report of Mulugeta (2018) who indicated that the participation of school leaders in the process of building up good citizenship in Ethiopia was unsatisfactory. In relation to this, Lickona (2006) also asserted that one of the major potential challenges in values-education efforts is the lack of committed moral leadership in schools.

Absence of Authentic Assessment, Ground for Moral Corruption

The implementation of continuous assessment is becoming a cause for unethical behavior. Areya claimed that high school students have passed through a system of continuous assessment that let them promote to the next grade without fulfilling the expected academic profile. He said, '…Almost there is no detainee at lower grades. ….. These students will face

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difficulties in academic performance when they join secondary schools.' This reveals that academic inefficiency will cause misbehavior. If someone is academically poor, he will not be interested to attend the class and perform academic activities. Subsequently, there will have been many more kinds of undesirable moral character.

Once upon a time, one of us (researchers) has contacted an English teacher having thirty years of experiences. In the middle of the chat, he irritatingly complained about the academic performance of students. Being eager, the interviewer moved to him and made him continue with this agenda. The teacher said, 'In any section, we are teaching only four or not more than four students; the rest are passively sitting in the classroom….. It is the result of massive promotion at lower grades' (Yimenu). The teacher here complained that very few students are trying to exert high mental effort on learning. The vast majority of them are incompetent. They are detached with learning engagements because of various reasons. He attributed the problem to the lower schools and their grading system. The students have got easy access to join secondary schools without having adequate proficiency. They are also ambitious to complete schooling with least mental effort on learning.

If there is no intervention here, the student may complete at the end of the day but without learning. Areya expressed his feeling as, 'He has stayed in schools but not learnt. His future is dark. He didn`t learn agriculture. He didn`t learn business idea…. He is made to remain idle.' He seems to remind us critically observe and analyse what has happened and is happening in our country. If one shares this idea, he or she will come to the conclusion that the generation will completely fail somewhere if continued this way. We may not escape from that. If we do not alleviate this kind of misbehavior happening in secondary schools, there will be fertile ground for moral corruption. Thus, it is advisable to make our students independent and autonomous learners through the proper implementation of authentic continuous assessment.

Lack of Teacher Unity and Parental Engagement

The beliefs of many teachers about the roles they have on the values-education endeavor were generally expressed positive. In practice, however, their roles regarding discipline management were found to be almost negligible. They have low interest in supporting students in terms of behavior regulation. They consider that discipline management was the duty of principals and unit leaders. On the other hand, there is no unity among teachers in handling disciplinary problems. One of the teachers, Nebyu, speaks in the interview as, "... while there are many teachers being ignorant of misbehavior displayed, there are also teachers being strict in handling discipline." This means managing discipline and developing moral behavior is left to certain groups, which in turn will result in challenges for the committed teachers.

Being civics and ethical education teacher, Debasu has proved in his own words that he strived to educate students by setting an example for others, but the lack of co-operation in the process would make it difficult for students to achieve the expected change in moral behavior. He said,

> I attend at a flag-raising ceremony. I let students line up. I sing the national anthem
> along with them. Observing this action, the students are surprised. Some teachers make

fun of me; they portray me as an impostor. But since I am the owner of the subject, I will continue to with this, no embarrassment. That is a small model; much is needed from me. (Debasu)

In view of the vignette here, Debasu has tried to be an example of a flag celebration. He felt that he would join the students and sing the national anthem. In the process, however, he was receiving discouraging feedback from some of his colleagues. He was even being teased and ridiculed. This cynical action of the colleagues did not reverse his mental position. The good thing on the other hand was that the students commended him because of his action. Apparently, that might be why he asserted that he would continue to do so. In summary, there was no unity among the teachers on such kind of moral education. This kind of situation would not only harm motivation of the working teachers but would also lead to fruitless student moral behaviors. A morally competent teacher is the one who sees the development of student's moral life and character as a professional responsibility and priority (Mulugeta, 2018). If we do not first have our moral house in order, students will tend to discount our moral claims (LaFollette, 2007).

Parental engagement is decisive for the development of moral character. Students are only required to attend school for a certain number of hours per day, with the vast majority of their time spent with their parents. Different virtues like honesty, responsibility, and respect for teachers or elders are expected to be taught also by parents. However, participants mentioned that parent-related challenges are among the barriers in the works of values-education. There are gaps on the part of parents to support the values-education process. One of the teacher participants, Nebyu, puts, '….some parents, for example, consider that the money they give for their children's educational services would be taken by teachers for private use.' This reveals that there are parents who do not even know for what purpose they give money to their children. If parents do not keep a close eye on their children, they will never know what is going on in school. Nebyu has also reflected on other related experiences as follows:

> ... There are cases when parents complain or oppose what the teacher is doing regarding disciplinary problems. They consider their child is correct but the teacher is wrong. When we call parents for certain disciplinary matters, they try to deny, protect, or are not ready to accept mistakes. There was one student who was not attending the practical lab in my ICT lesson. Subsequently, I forbade her to sit for the lab practical exam. Her father came and shouted at me. He even took the case to the principal and accused me. So, how can students accept me as a teacher and their leader? How could they possibly obey me? (Nebyu)

As it can be observed in the verbatim here, there is no integration and close contact between teachers and parents. If parents oppose what the teachers are working with discipline management, it means that they have no trust on the teachers. When we see Nebyu's encounter, the father of the girl was to protect his daughter by any means. But he did not understand the intention of the teacher in maintaining the quality of education. This signifies that parents do not appear to be willing to admit their children's mistakes, as they suspect a history of blacklisting and potential harsh measures in the future. We feel that if teachers do not communicate with

parents about the school's behavior, parents may become distant from cooperation. A similar result was found by Mulugeta (2018), who explored that lack of key stakeholder support is one of the potential problems in the efforts to build good citizenship in Ethiopia. As a result, it will be a challenge to discipline the students within this circle of influence. Therefore, every teacher needs to establish close contact with the parents and enable them to have an understanding of the intention of the teachers in maintaining discipline. This is because, as Lickona (2006) argues, parents are key actors in the teaching of moral character. It is also advisable to remind that when children commit mistakes, reasonable steps need to be taken to help the individual see why his/her actions are unacceptable rather than simply ensure conformity under threat of more severe sanction in future (Wringe, 2006).

Conclusions and Implications

The research suggests that there were significant challenges that affect teachers` practices of values-education. The challenges were found to be the causes for the disengagement of teachers in the efforts of integrated values-education. One of the common challenges was the improper view perception of students on the benefits of education. The second challenges are related to the exclusion of religious-oriented common moral values and the presence of false narrations in the curriculum of the present education system. The theory-practice gap and lack of exemplars was found to be the third hindrance in the efforts of values-education. There were also significant challenges which include lack of unity and coordination among the staff in handling discipline, lack of effective leadership on the part of the principals, lack of authentic assessment carried out by the teachers, and poor parental support. Even though some of the difficulties mentioned by the teachers are general that would affect any educational process, they have further influence on the teaching of ethics. These all were found to be challenges for teachers to shape the students to the desired moral line.

Due to those factors, teachers tended to be reluctant to take on values-education passionately and enthusiastically. We also felt that the challenges mentioned by the teachers are problematic in the teaching of sound moral character. However, if we are afraid of the challenges and do not exert more effort on our value-education system, the situation here in our country will continue to worsen. Therefore, all teachers need to be concerned about the imminent fragmentation of society unless they confront and work with the challenges. We suggest that the challenges be resolved in collaboration with key stakeholders. In accordance with this view, teachers can discharge their responsibilities for wholistic personality development. On the other hand, the challenges encountered do not always have disadvantages. They also have their own benefits. Thus, it is advisable to take the challenges as essential opportunities for innovation, criticality, and professional development rather than consider them threats. In this regard, it is implied that the Ministry of Education needs to enhance teachers' moral competencies and professional demeanors, possibly through pre-service and in-service training. Furthermore, we suggest other researchers conduct investigations into such sensitive issues of the century.

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Factors Associated with Birth Weight among Newborns Delivered at Finote Selam Hospital, Amhara National Regional State, Ethiopia

Demeke Wolie Ambaye[a][6](PhD), Mahlet Shiferaw [b]

[a] Assistant Prof., Department of Psychology, College of Education and Behavioral sciences, Bahir Dar University

[b] Graduate Student, Department of Psychology, College of Education and Behavioral sciences, Bahir Dar University

Abstract

This study aimed to investigate the major factors associated with birth weight in newborns delivered at Finote Selam Hospital, Amhara Region. For this purpose, quantitative research approach with cross-sectional design was used. Data were collected from 165 mothers delivered at Finote Selam Hospital from February 27 to March 21, 2020. To analyze the data, both descriptive and inferential statistical techniques were employed. Multivariable logistic regression analysis was used to identify the associated factors. The findings have shown that mothers who were unable to read and write, had informal education, and attended primary level of education with values of OR= 72.2 %, OR=4.166, and OR=11.424 respectively were more likely to have a low birth-weight neonates. Babies who were born <37 weeks were 1.523 times more likely to be low birth weight. Mothers who did not take iron and folic supplementation during pregnancy were 19.2% more likely to have a low birth weight babies. Mothers who did not experience pregnancy complications showed 0.187 times decreased delivered low birth weight. Mothers who were taking substances, or taking one to two times, and three times during pregnancy showed decreased chance of low delivered birth weight. On the contrary, mothers who were taking substances more than four times and above had a more likelihood to deliver low birth weighted babies. Overall, most of the variables under consideration had a paramount impact on newborns' birth weight. The findings of the study imply that various stakeholders should discharge their responsibilities to alleviate the problem of low birth weight.

Introduction

According to the World Health Organization (WHO), birth weight is understood as the first weight of the newborn obtained immediately after birth within the first hour of life before significant weight loss occurs after birth. It is classified into three: macrosomia (> 4.5kg), normal birth weight (2.5 -4.5 kg), and low birth weight (< 2.5kg) (WHO, 2008).

Globally, birth weight (BW) is a key predictor of the health survival and development of a newborn baby. It is not only associated with the high mortality risk during childhood, but also highly associated with health, physical, emotional, psychological, and scholastic development and wellbeing in childhood and adulthood (Islam & Elsayed, 2015).

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[6]**CONTACT** Demeke Wolie Ambaye, email: demekewolie2005@yahoo.com

Research across the globe revealed that the factors associated with birth weight of new-born babies had direct impact on intrauterine growth which includes infant sex, racial/ethnic origin, maternal height, pre-pregnancy weight, paternal weight and height, maternal birth weight, parity, history of prior low-birth-weight infants, gestational weight gain and caloric intake, general morbidity and episodic illness, malaria, cigarette smoking, alcohol consumption, and tobacco chewing (Muthayya, 2009). Consequently, in developing countries, the major determinants of Intra Uterine Growth Restriction (IUGR) are poor gestational nutrition, low pre-pregnancy weight, short maternal size, and malaria. Whereas in developed countries, the most important single reason, by far, is cigarette smoking, followed by poor gestational nutrition and low pre-pregnancy weight. For the gestational duration, only pre-pregnancy weight, prior history of prematurity or spontaneous abortion, and cigarette smoking have well established causal effects, and the majority of prematurity occurs in both developing and developed country settings remain unexplained (Karmer, 1987). Shortage of uterine resources resulting in intrauterine growth restriction hurts cognitive development in childhood. The effect of intrauterine growth restriction is directly related with family socioeconomic status (SES) so that low-SES families reinforce the effect of low birth weight and high-SES families fully compensate for it (Torche & Echevarría, 2011).

A study by a research group on over 1500 pregnant women delivering at a district general hospital in inner London showed that maternal smoking, stress, and poor socioeconomic conditions during pregnancy were linked with low birth weight babies. However, the most important influence on fetal growth was smoking, which was associated with a 5% reduction in birth weight after adjustment for maternal height and parity, gestation, and the baby's sex. The study concluded that any effect of stress and poor environment on fetal growth is small compared with the effect of smoking (Brooke, Anderson, Bland, Peacock & Stewart, 1989).

Researchers have attempted to study maternal factors associated with child birth weight. For instance, Muftah (2016) revealed that maternal nutritional status, young maternal age, bad obstetric history, maternal anemia and rural settlements, antenatal care received, prematurity, and the birth interval were highly associated with newly born child birth weight outcome. Besides, Agarwal & Reddaiah (2005) in their study confirmed that non-use of antenatal care during pregnancy was independently and significantly associated with low birth weight.

Africa is a continent that has high rates of children born with LBW and most recent studies have shown a high rate of child mortality. It is expected that in sub-Saharan Africa, LBW represents 14.3% that is approximately twice the rate of LBW in European countries (Tchamo, Prista & Leandro, 2016). For example, the prevalence of low birth weight in Ghana, Burkinafaso, Senegal, Malawi, and Uganda was 10.2%, 13.4%, 15.7%, 12.1%, and 10%. respectively (He, Bishwajit, Yaya, Cheng, Zou & Zhou, 2018)

In Ethiopia, according to the 2011 Ethiopian demographic and health survey, only less than eight percent of children are normal birth weight. This is not unexpected because quite many births do not take place in a health facility, and children are less likely to be weighed at birth in a non-institutional setting. Maternal socio-demographic (maternal education level, occupation, income, and place of residence), maternal/obstetric (maternal age, antenatal care visit, maternal weight, and stature, preterm birth, and parity), obstetric and medical disorders

during pregnancy (hypertensive disorders of pregnancy, anemia, and malaria) and fetal factors (infant sex and congenital malformations) were the common risk factors for newly born birth weight in the region (Amhara, 2018).

Besides, a study in Laelay Maichew district showed that sex of neonate, less than four antenatal care follow-ups, unwanted and unplanned pregnancy, and maternal dietary intake per 24 hours during pregnancy were associated with low birth weight (Adane & Dachew, 2018).

Similarly, researchers in the area asserted that there are patterns of relationships among maternal demographic, maternal factor, and nutritional factors on child birth weight. For instance, according to Wachamo, Yimer, and Bizuneh (2019), newborn birth weight was associated with maternal weight during pregnancy, paternal education, previous obstetrics complication and place of antenatal follow-up. They suggested that these factors were the major determinants affecting newborns' birth weight.

Furthermore, a study conducted in Gondar showed that 485 (89.8%) mothers had ANC follow up during the course of pregnancy (Zeleke, Zelalem & Mohammed, 2012). Three hundred twenty-four (66.8%) had four and above antenatal care visits during their pregnancy. In this study, the frequency of ANC visit was high with a significant impact on child birth weight (Zeleke, et al., 2012).

A prospective follow up study conducted in Bahir Dar City Administration also showed that the prevalence of low birth weight (< 2500 g) was 7.8% (95% CI = 6.0%, 9.7%) with 1.4% versus 10.5% among those who received acceptable and not acceptable quality ANC services respectively. In this study, maternal nutritional advice, iron-folic acid supplementation, maternal educational status, parity and age were predictors of birth weight (Tafere, Afework &Yalew, 2018).

In general, empirical studies, both international and local, revealed that birth weight represents a heavy burden for holistic child development. One of the salient slogans of the World Health Organization, *children's health is tomorrow's wealth,* has been given little attention. In addition, most researches conducted on birth weight outcomes in Ethiopia focused mainly on identifying risk factors of clinical/medical importance and documented the prevalence of child low birth weight within a cross-sectional design. However, to the best knowledge of the researchers, no adequate research has been conducted on the factors that associate with the birth weight of newly born children specifically in Finote Selam Hospital, Amhara Region.

Thus, this study aims to assess the factors associated with birth weight focusing on both normal birth weight as well as low birth weight in Finote Selam Hospital[7]. To achieve this purpose, the following research questions were formulated: (1) to what extent was the birth weight of newly born babies associated with the study variables? (2) to what extent did the combinations of the study variables predict the birth weight of the newly born babies?

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[7] It is a government hospital found in West Gojjam Administrative Zone of the Amhara National Regional State. It is 385 kilometers away from Addis Ababa and 176 kilometers from Bahir Dar, the capital city of the Amhara National Regional State.

Methods

Design of the Study

As indicated earlier, this study sought to identify factors associated with birth-weight among newborns focusing on both low birth weight and normal birth weight of newly born babies. To achieve this purpose, the study employed a quantitative research approach with correlational design as it is appropriate to measure the degree of association between two or more variables and to examine to what extent a set of predictor variables predict an outcome variable.

Variables

Birth weight was the *criterion variable* of the study. It can be either low birth weight (1) or normal birth weight (0). The study has also two major *predictor variables*. The first one was demographic-related factors including (a) maternal age, educational level of the mother[8], occupational status of the mother[9], and marital status of the mother[10]. The second variable, on the other hand, includes the following maternal-related factors: (a) pregnancy interval of previous birth, (b) pregnancy ANC follow up, (c) gestation period, (d) substance use of the mother, and (e) nutritional status during pregnancy and iron and folic supplementation.

Sampling

The target population of this study was mothers who delivered their children at Finote Selam Hospital in the study period, i.e., from February 27 to March 21, 2020. By taking into account the complexity of data collection, a comprehensive sampling technique was employed. In this study, random sampling technique was not employed because of the nature of the respondents. Hence, all mothers in the study period from February 27 to March 21, 2020 were considered. According to Stevens' (1996) recommendation, about 15 participants per predictors are needed for a reliable equation. In this study, therefore, 65 mothers who came to the hospital during the study period to deliver their newborns were selected comprehensively.

Data Gathering

In order to get relevant information, both primary and secondary data were used. Of primary data sources, a questionnaire was delivered to cover all the predictor variables for newborn babies' mothers whereas document review was used as a secondary data source for newborn baby's weight recorded. Both questionnaire and document observation (analysis) were used to collect the data. The data collection instruments were modified based on the framework and objectives of the study. Moreover, WHO policy documents were used as important references of the study.

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[8] 0= unable to read and write, 1=able to read (informal education, 2= primary school level, 3= secondary school and above.
[9] 0= housewife, 1= farmer, 2= merchant, 3= government worker, 4= other
[10] 0= married, 1= divorced, 2= separated, 3= single, 4= widowed

The tools were adapted and modified from studies conducted in Tanzania, Kenya, and Hosanna (Ethiopia) which passed through peer review for instrument validity (Abdo, Endalamaw & Tesso, 2016; Muchemi, Echoka & Makokha, 2015; Siza, 2008). Since the tools were developed and validated in another culture, they were adapted to the local language passing through various steps. In this regard, the instruments were translated from English to Amharic and back from Amharic to English language with the help of two Ph.D. students in the department of Foreign Language and Linguistics. After this, the questionnaire was tried out on eight mothers of the study population at the same hospital.

Before data collection, informed consent was obtained from the Psychology Department of Bahir Dar University. To gain access to potential participants of the study, i.e., mothers of newly born babies, interpersonal contact techniques were used. In the study, only participants who were volunteer to participate were considered.

The data collection process passed through the following five phases. In the first phase attention was given for the preparation of the instruments. Next to this, in the second phase, the researchers administered the questionnaire. Of course, before the questionnaire was administered, participants were invited to share their experience for the purpose of rapports. The questionnaire, consisting of a series of questions prepared to gather information from respondents, was administered by one of the researchers. The third phase of the data collection process was devoted to the observation of the newly born babies' weight registration document that corresponds with the baby's weight. While doing the tasks of this phase, the researchers were assisted by the hospital's health workers.

During the fourth phase of data collection, the researchers observed additional overall newly born babies' weight record documents. Finally, in the fifth phase, the tasks of document observation and questionnaire administration were completed. Here, all the documents were returned.

Data Analysis

After quantitative data collection, the data were checked for completeness and consistency. Following this, data were coded and entered into SPSS, version 25 software. The data entered were cleaned and edited before subsequent analyses.

The data entered into SPSS were analyzed using descriptive and inferential statistical techniques. Among the descriptive statistical methods, means, standard deviations, frequencies, percentages, Chi-square and bivariate logistic regression were used. The Pearson Chi-square test was also employed to assess the association between the independent variables and the response variable.

From inferential statistics, multivariate logistic regression was used since the outcome variable was binary and some predictor variables were categorical while others were continuous. All statistical tests with significant associations were declared at a p-value of less than 0.05 (95% CI).

Results

Descriptive Statistics

Descriptive statistics is important to describe, summarize and organize data. Hence, the Tables, 1, 2, 3 and 4 below show the descriptive summary of the statistical features of a set of observations.

Table 1

Newly Born Child Birth Weight

Birth Weight	No. of respondents	Percent
Normal birth weight	77	46.7
Low birth weight	88	53.3
Total	165	100

As displayed in Table 1, a total of 165 mothers were included in the study. More than half, i.e., 88 (53.3%) delivered low birth weight babies (less than 2.5 KG). The remaining 77 (46.7%) mothers delivered normal weight babies (greater than or equal to 2.5 KG).

Table 2

Age, Pregnancy Interval and Gestational Age of Mothers

Variable	N	Mean	St. Deviation	Range	Min	Max
Age	163	27.47	4.205	20	17	37
Pregnancy interval	113	61.83	46.586	189	15	204
Gestational age	163	34.63	3.578	14	26	40

As can be seen from Table 2, the age of respondents ranged from 17 to 37 years. Moreover, the table indicates that the average mean and standard deviation of the women during the study time were 27.47 and 4.205 years respectively.

In relation to maternal last pregnancy interval, Table 2 displays that the interval ranges from the minimum interval of 15 months to the maximum interval of 204 months. Likewise, the mean and standard deviation of pregnancy interval, as indicated in the table, were 61.83 and 46.586 respectively. The mean, standard deviation, and range of last gestational age in terms of weeks were 34.63, 3.578, and 14 weeks, respectively.

Frequency Distribution

Table 3

Percentage distribution of newly born babies by independent categorical variables

Category	Description	Normal BW 2.5 – 4.5 KG %(n)	Low BW <2.5 KG % (n)	Total % (n)
Maternal Education	Unable to read	1.2(2)	12.7(21)	13.9(23)
	Able to read	5.5(9)	24.8(41)	30.3(50)
	Primary school level	16.4(27)	6.1(10)	22.4(39)
	Secondary school and above	23.6(39)	9.7(16)	33.3(55)
Maternal occupation	House Wife	13.3(22)	22.4(37)	35.8(59)
	Farmer	7.3(12)	20.6(34)	27.9(46)
	Merchant	11.5(19)	4.2(7)	15.8(26)
	Government Worker	14.5(24)	6.1(10)	20.6(34)
Marital Status	Married	35.2(58)	39.4(65)	74.5(123)
	Divorced	3.6(6)	4.2(7)	7.8(13)
	Separated	3.6(6)	4.8(8)	8.5(14)
	Single	2.4(4)	2.4(4)	4.8(8)
	Windowed	1.8(3)	2.4(4)	4.2(7)
Pregnancy Complication	Yes	17.6(29)	38.2(63)	55.8(92)
	No	29.1(48)	15.2(25)	44.2(73)
Antenatal Care Follow up	No ANC follow up	4.2(7)	17.6(29)	21.8(36)
	1st trimester ANC	26.7(44)	18.8(31)	45.5(75)
	2nd trimester ANC	7.3(12)	6.7(11)	13.9(23)
	3rd trimester ANC	8.5(14)	10.3(17)	18.8(31)
Substance usage	Not at all	32.3(53)	18.3(30)	50.6(83)
	1 to 2 times	7.3(12)	15.2(25)	22.6(37)
	Three times	3.0(5)	8.5(14)	11.6(19)
	Four and above	4.3(7)	11.0(18)	15.2(25)
Nutritional status	Balanced diet	33.9(56)	19.4(32)	53.3(88)
	Over nutrition	1.8(3)	3.6(6)	5.5(9)
	Under nutrition	10.9(18)	30.3(50)	41.2(68)
Iron and folic supplementation	Yes	34.5(57)	26.7(44)	61.2(101)
	No	12.1(20)	26.7(44)	38.8(64)

As indicated in Table 3, out of the total number of mothers, 23 (13.9%) mothers were unable to read and write. Among these mothers, 2 (1.2%) delivered normal birth weight babies whereas 21(12.7%) mothers delivered low birth weight babies. This indicates that the majority of mothers delivered low birth weight babies. In similar manner, out of the total number of mothers, 50 (30.3%) mothers were able to read and write. Among these mothers, 9 (5.5%) delivered

newborns whose birth weight was normal whereas 41(24.8%) delivered low birth weight newborns. These figures indicated that the majority of mothers delivered low birth weight newborns. Similarly, from the total number of mothers 39 (22.4%) mothers were under the category of primary school level. Among these mothers, 27 (16.4%) mothers delivered newborns whose birth weight was normal whereas 10 (6.1%) mothers delivered newborns whose birth weight was low. From these figures, we can say more mothers gave normal birth weight babies than mothers of their counterparts. In the same vein, out of the total number of mothers, 55(33.3%) mothers were at secondary level education. Among these mothers, 39 (23.6%) delivered newborns whose birth weight was normal whereas 16 (9.7%) mothers delivered low birth weight babies. The figures informed us more mothers delivered normal birth weight than mothers of their counterparts. Perhaps, from the above result, we can say that as mothers' education levels increase, the possibility of newborns of low birth weights decrease, however, it is too early to conclude at this stage.

As indicated from the above table, 59 (35.8% of mothers were house wives. From these mothers, 22 (13.3%) delivered babies whose birth weight was normal whereas 37 (22.4%) mothers delivered babies whose birth weight was low. These figures inform us that more mothers delivered newly born babies whose birth weight was low than mothers who delivered newborns whose birth weight was normal. In the same way, out of the total number of mothers, 46 (27.9%) were farmers. Among these mothers, 12 (7.3%) delivered normal birth weight newborns whereas 34 (20.6%) mothers delivered babies of low birth weight. The figures indicate that less mothers delivered normal birth weight babies than mothers of their counterparts. Furthermore, out of the total number of mothers 26 (15.8%) were merchants. Out of the merchant mothers, 19 (11.5%) delivered newborns whose birth weights were normal whereas 7 (4.2%) mothers gave birth to their child whose birth weights were low. These figures confirmed that more mothers in this category delivered normal newborns than mothers of their counterparts. Likewise, out of the total numbers of mothers, 34 (20.6%) were government employees. Among these, 24 (14.5%) delivered newborns whose birth weight was normal whereas 10 (6.1%) mothers delivered newborns whose birth weight was low. From these figures, we can say more mothers delivered newborns whose birth weight were normal than those of their counterparts.

In relation to marital status, out of the total number of mothers, 123 (74.5%) were married. Among these mothers, 58 (35.2 %) delivered NBW babies whereas 65 (39.4 %) mothers delivered newborns whose birth weight was low which indicates more mothers delivered low birth weight babies than mothers of their counterparts. Similarly, out of 13 (7.8%) of mothers who were divorced, about 7 (4.2%) delivered NBW babies whereas 6 (3.6%) mothers delivered LBW babies. This indicates more mothers in this category delivered normal birth weight babies than mothers of their counterparts. In the same way, out of the total number of mothers, 14 (8.5%) were separated. From these mothers, 6 (3.6%) delivered normal birth weight babies whereas 8 (4.8%) mothers delivered low birth weight babies. These figures indicate us fewer mothers deliver normal birth weight babies than mothers of their counterparts. In another category of marital status, out of the total number of mothers, 8 (4.8%) were single. Among these mothers, 4 (2.4%) delivered normal birth weight babies whereas 4 (2.4%) delivered low birth weight babies. Lastly, out of total number of mothers, 7 (4.2%) were widowed. From these

mothers, 3 (1.8%) delivered normal birth weight babies whereas 4 (2.4%) delivered low birth weight babies.

In relation to pregnancy complication, from the total number of mothers, 92 (55.8%) faced pregnancy complication. Among these mothers, 29 (17.6%) delivered normal birth weight babies whereas 63 (38.2%) delivered low birth weight babies. The figures inform that more mothers delivered low birth weight babies than mothers of their counterparts. In the contrary, 73 (44.2%) of mothers did not face pregnancy complications. Among these mothers, 48 (29.1%) delivered normal birth weight whereas 25 (15.2%) delivered low birth weight babies. From these figures, it is possible to say that more mothers delivered newborn whose birth weight was normal than mothers of their counterparts.

In relation to antenatal care follow up, out of the total number of mothers, 36 (21.8%) mothers did not take antenatal care follow up. Among these mothers, 7(4.2%) delivered normal birth weight newborns whereas 29 (17.6%) delivered low birth weight newborns. This implies that mothers who did not take antenatal care follow up delivered significant number of low birth weight newborns. In another category, out of the total number of mothers, 75(45.5%) of the mothers attended first-round trimester antenatal care follow-up and from those mothers 44 (26.7 %) delivered NBW babies whereas 31 (18.8 %) mothers delivered LBW babies. In the same way, out of the pregnant mothers who had followed second-round trimester, 12 (7.3%) delivered NBW newborns but the other 11 (6.7%) mothers delivered LBW babies. Lastly, 31(18.8%) mothers who were following only the third-round trimester, about 14 (8.5%) mothers delivered NBW babies whereas 17 (10.3%) of mothers delivered LBW babies.

With regard to substance use, 83 (50.6%) of mothers did not use substances. Among these mothers, 53 (32.3%) delivered normal birth weight babies whereas 30 (18.3%) delivered low birth weight babies. The figures show that more mothers in this category deliver normal birth weight newborns than mothers of their counter parts. Besides, 37 (22.6%) of mothers used substances 1-2 times. Among these mothers, 12 (7.3%) delivered newborns whose birth weight was normal whereas 25 (15.2%) delivered low birth weight newborns. From the other category of substance use, 19 (11.6%) mothers used substances three times. Among these mothers, 5 (3%) delivered normal birth weight babies whereas 14 (8.5%) delivered low birth weight babies. These figures indicate that almost three folds of mothers gave birth to their babies having low birth weight. As indicated in the table above, 25 (15.2%) of mothers used substances four and above times. Among these mothers, 7 (4.3%) gave birth to their babies having normal birth weight whereas 18 (11.0%) gave birth to their babies having low birth weight.

With regard to nutritional status, 88 (53.3%) of mothers used balanced diet, out of which 56 (33.9%) delivered normal birth weight babies whereas 32 (19.4%) delivered low birth weight babies. The figures indicate that more mothers gave normal birth weight than mothers of their counterparts. Out of the total number of mothers, 9 (5.5%) of mothers were classified under over nutrition category. Among these mothers, 3 (1.8%) delivered normal birth weight babies whereas 6 (3.6%) delivered low birth weight babies. The figures indicate that more mothers delivered low birth weight babies than mothers who gave normal birth weight babies. In the last category, 68 (41.2%) of mothers were under nutritional status. Out of these mothers, 18(10.9%) delivered normal birth weight babies whereas 50 (30.3%) delivered newborns whose birth weight was low.

The figures show that mothers under this category delivered more low birth weight babies than normal birth weight babies.

Out of 165 mothers, around 101 (61.2%) took iron and folic supplementation during their pregnancy. Among these mothers, 57 (34.5%) delivered normal birth weight babies whereas 44 (26.7%) delivered low birth weight babies. Out of 64 (38.8%) of the mothers who did not take iron and folic supplementation, only 20 (12.1%) of the mothers delivered normal birth weight babies whereas 44 (26.7%) of mothers gave birth to their child whose birth weight was low.

Chi-squares Test of Associations

A Kx2 Chi-square analysis was conducted to assess the association between birth weight and series of predictor variables as indicated below. The bivariate statistical analysis addresses the marginal effect of a predictor variable on the response without taking into account other predictors. To determine the factors which are significantly correlated with the criterion variable, a preliminary assessment was used using the chi-square test.

Table 4

Chi-square Test of Association Between Newly Born Birth Weight and Predictor Variables

Variables	Pearson-Chi-squares Value	D.F	Sig.(P-Value)
Maternal Education	53.107	3	<0.001
Maternal Occupation	25.016	3	<0.001
Marital Status	3.914	4	0.418*
Pregnancy Complication	19.164	1	<0.001
Antenatal Care Follow up	15.367	3	0.002
Substance Use	19.507	3	<0.001
Nutritional Status	21.969	2	<0.001
Iron and Folic Supplementations	9.984	1	0.002

As shown in Table 4, the predictor variables were strongly associated with the criterion variable. Thus, maternal education level (χ^2 (3,165) =53.107, p<.05) was significantly associated with newborns' birth weight. This indicates that newborn's birth weight varies across the levels of mother's education. As shown from the table above, marital status (χ^2 (4,165) = 3.814, p> .418) was not significantly associated with birth weight of newborns which implies that there was no real evidence that shows the variation of birth weight across marital status categories. On the other hand, pregnancy complication (χ^2 (1,165) = 19.164, p<.05) was significantly correlated with birth weight of newborns. This implies that birth weight varies across the levels of pregnancy complication. Similarly, there was statistically significant association between Antenatal Care Follow up and birth weight of newborns (χ^2 (3,165) = 15.367, p<.05). This indicates birth weight of newborns varies across the categories of Antenatal Care Follow up. In similar manner, as indicated from the table, substance use was significantly associated with birth weight of newborns (χ^2 (3,165) = 19.507, p<.05) which implies that existence of variability of

birth weight across the categories of substance use. The result from the above tables shows that nutritional status and birth weight of newborns were significantly associated (χ^2 (2,165) = 21.969, p<.05). Perhaps, this indicates that variation in the nutritional status of mothers results in variation in birth weight of newborns. Lastly, iron and folic supplementation was significantly associated with birth weight of newborns (χ^2 (1,165) =9.984, p<.05) which shows birth weight of newborns varies as mother's iron and folic supplementation varies.

Logistic Regression

Bivariate logistic analysis

The first step in the model development process is to select explanatory variables that have the potential to be included in the bivariate analysis model. A bivariate analysis was conducted to examine the relationship of each of the selected predictor variables with outcome variable. It was found that there was a significant association between predictor variables and newly born baby's birth weight. However, a bivariate association between two variables does not necessarily imply a significant causal relationship between them because in real life more than one predictor variables operate to influence the response variable.

Therefore, it is important to carry out a statistical analysis that would incorporate more than one predictor variable at a time. Bivariate logistic regression analyses were performed between maternal age, educational level, occupational status, marital status, pregnancy complication, gestational period, inter pregnancy interval, nutritional status, substance use, iron folic supplementation and ANC follow up on childbirth weight. Even though, three of the eleven variables did not show a significant association with newly born childbirth birth weight at a 95% level of significance. In this regard, the age of mothers, pregnancy intervals, and marital status were not statistically significant at a 0.05 level of significance.

According to Agresti, (2003), Bivariate test having a p-value ≤0.25 is a candidate for multivariable model. So, 0.25 level can be used as a screening criterion for variable selection on binary logistic regression. Based on this, the bivariate logistic regression p< 0.25 analysis of this study revealed that maternal age, educational status, occupational status, marital status, gestational age, ANC visit, pregnancy complication during pregnancy, pregnancy interval, frequency of substance use, iron and folic supplementation and nutritional status were statistically significant with birth weight in the bivariate model. However, maternal age and pregnancy interval did not show significant association with newly born childbirth weight at a75% level of significance. In this regard, the age of mothers and pregnancy intervals (age, p=0.547 & pregnancy interval, p =0.858) were not significant at a 0.25 level of significance and were excluded first from further multivariate analysis.

Multivariate analysis

The main problem with the bivariate approach is that it ignores the possibility that a collection of variables, each of which could be weakly associated with the outcome, can become an important predictor of the outcome when taken together (Hosmer & Lemeshow, 1989).

Hence, multivariate logistic regression approach that takes into account the drawback mentioned by the bivariant technique is considered in the following analysis. Using this method, the model that best described the outcome variable (birth weight) is fitted using the explanatory variables. The forward stepwise technique was used to select the best model.

Table 5

Results of Final Multivariate Binary Logistic Regression Model

Variables	Sub-groups	B	β	Wald	df	Sig. (P-value)	Exp (β) (OR)	95% C.I. for Exp(β)	
								Lower	Upper
				28.061	3	.000			
Education	Unable to read	3.576	1.096	10.638	1	.001*	35.722	4.166	306.268
	Able to read	2.436	.628	15.036	1	.001*	11.424	3.335	39.130
	Primary school level	-.441	.688	.410	1	.522	.644	.167	2.479
	Secondary school level & above (Ref)								
Pregnancy complication	No	-1.676	.515	10.579	1	.001*	.187	.068	.514
	Yes (Ref)								
Gesta. age		-.421	.104	16.196	1	.001*	.523	1.241	1.869
				15.819	3	.001*			
	Not at all	-3.477	1.121	9.616	1	.002*	.031	.003	.278
Substance usage	1 to 2 times	-1.312	1.060	1.532	1	.216	.269	.034	2.150
	Three times	-1.375	1.180	1.358	1	.244	.253	.025	2.554
	Four and above (Ref)								
Iron & folic supplementation.	No	1.161	.568	4.175	1	.041*	3.192	1.048	9.719
	Yes (Ref)								
Constant		-2.899	3.225	15.996	1	.000	.000		

Note. * Significant (p< 0.05). Ref. indicates the reference category

The significance of the Wald statistics (under the column with heading Sig.) indicates the importance of the predictor variables in the model. A high value of the Wald statistics shows that the corresponding predictor variable is significant.

As shown in Table 5, from the multivariate logistic regression analysis, maternal educational level was significant predictor of the likelihood of birth weight of newborns. That is, mothers who were unable to read and write (Wald = 10.6, p<.00) were significantly associated with likelihood of birth weight. Thus, mothers who were unable to read and write were 35.722 times more likely gave low birth weight babies than those mothers whose educational level was secondary and above (unable to read and write =0; secondary and above (ref.category) = 3; low birth weight =1, normal birth weight =0). Similarly, mothers who were able to read and write (Wald = 15.036, p<.001) significantly predicted the likelihood of newborn's birth weight. That means, the odds ratio 11.424 shows that mothers who were able to read and write gave birth 11.424 times more likely low birth weight babies than mothers whose educational level was

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secondary and above. The results imply that as educational level of mothers decrease, the likelihood of low birth weight babies was delivered. In contrast, the findings indicate that there was no real evidence that showed birth weight differences between mothers whose educational levels were primary school and secondary and above.

From the table above, pregnancy complication (Wald = 10.579, p<.001) significantly predicted the likelihood of birth weight of newborns. The odds ratio .187 indicates that mothers who did not face pregnancy complications were .187 times less likely to give low birth weight babies than mothers who faced pregnancy complication (Yes = 1(ref. category), No =0, low birth weight =1, normal birth weight = 0). This implies that mothers who did not face pregnancy complications delivered normal birth weight babies as compared to mothers of their counterparts.

As displayed on the table above, gestational age (Wald = 16.196, p<.001) significantly predicted the likelihood of newborn's birth weight. The odds ratio .523 confirmed that a unit increase in gestational age decreased .523 times greater likelihood of low birth weight babies to be born. This indicates that, as the gestational age increased, the likelihood of newborn's birth weight was be normal.

From the above table, substance use significantly predicted the odds of newborn's birth weight. That is, mothers who did not use substances at all (Wald = 9.616, p<.031) significantly predicted the odds of newborn's birth weight. As a result, mothers who did not use substances at all delivered .031 times more likely normal birth weight babies than mothers who used substances four and more times. However, as indicated from the table above, the odds of birth weight did not vary across the levels of the other categories of substance use mothers in comparison to the reference category (Not at all = 0, 1-2 times = 1, three times =2 and four and above times (ref.category)= 3; low birth weight =1, normal birth weight =0).

Furthermore, iron and folic supplementation (Wald = 4.175, p<.041) significantly predicted the odds of birth weight of newborns. The odds ratio indicates that mothers who took iron and folic supplementation were 3.192 times more likely delivered normal birth weight babies than mothers who did not take iron and folic supplementation (Yes =1(ref.category), No =0; low birth weight =1, normal birth weight =0). However, from nine variables, other four independent or predictor variables were not statistically significant and hence not included in the Multivariate analysis tested at a p-value of 0.05.

Table 6

Model Summary for the Final Model

-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
107.316	.514	.686

As displayed in Table 6, the analysis revealed that statistically significant predictor variables such as maternal educational level, pregnancy complication, gestational age, pregnancy interval, substance use, and iron folic supplementation characteristics contributed 51.4% variance shared to newly born child birth weight (normal or low). Totally, the variance in birth

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weight of newborns that was accounted for by predictor variables was 68.6%. Pseudo R squares are additional measures of goodness of fit for ordinal logistic regression. Table 6 shows that the values of the two pseudo R square measures namely, Cox and Snell and Nagelkerke are .514 and .686 respectively for the final model which are good enough.

Discussion

Child birth weight has been affected by different contextual factors. The predominant factors associated with child birth weight are maternal factors. Thus, an attempt was made to identify the factors associated with birth weight as a binary outcome variable (low and normal birth weight).

The finding of the present study showed that mother's educational status was an important predictor of birth weight. For instance, as compared to the reference category (secondary and above educational level), the odds of having low birth weight babies increased by a factor of 35.722 for mothers who are unable to read and write (no education). In another category of educational status, the finding confirmed that mothers who are able to read and write are more likely to deliver low birth weight babies than mothers whose educational status was secondary and above. These findings imply that less educated mothers were more likely to give low birth weight babies. These findings are in line with a study conducted in Ghana which showed that maternal educational level was independent predictor of birth weight (Mohammed, Bonsing, Yakubu & Wondong, 2019).

However, studies in the past reported findings that contradict the findings of the present study. For instance, medium level of education showed no significant prediction when compared to low maternal education (Silvestrin, Silva, Hirakata, Goldani, Silveira, & Goldani, 2013). On the other hand, some studies showed results similar results to the current study. For instance, the study conducted by McCrary & Royer (2006) revealed that childbirth weight and wellbeing positively correlated with mother's education. It is indubitable that educated mothers have awareness on how to manage themselves during prenatal stage by taking different precaution methods. Inconsistencies are evident as long as various contextual factors are in place. Thus, the researchers of this study advise to conduct further studies so as to clarify these irregularities.

With regard to gestation age, the present study shows that it has an important role in determining the infant's birth weight. According to this finding, gestation age significantly predicted the odds of newborns birth weight. As a result, babies who were born less than 37 weeks were more likely to have low birth weight as compared to those born at their full term or greater than or equal to 37 weeks. This finding is consistent to the findings of a previous study that was conducted in Ardabil, Iran (Mirzarahimi, Hazrati, Ahmadi & Alijahan, 2013). In this study, birth was reported to be a risk factor of low birth weight. Besides, a study conducted in Kuala Lumpur, Malaysia (Sutan, Mohtar, Mahat & Tamil, 2014), supports the findings of the present study. According to the finding of this study, premature delivery was among the predictors of low birth weight. The study conducted in the university of Gondar hospital (Adane, Ararsa, Bitew & Zeleke, 2014) further strengthened the findings of the present study. This study

explored those preterm births were about six times more likely to be of low birth weight when compared to full term ones. Likewise, the study conducted in Tigray region reported that premature delivery (gestational period less than 37weeks) was one of the important predictors of low birth weight (Gebremedhin, Ambaw, Admassu & Berhane, 2015; Mengesha,Wuneh, Weldearegawi & Selvakumar, 2017). All these studies make it clear that babies born premature, i.e., before completing their term due to any gynecological, medical, or other causes, are not completing their normal physical development in the womb and are at higher risk to have low weight at birth.

For the variable iron and folic supplementation, the present study investigated that mothers who did not take iron and folic supplementation are more likely to born low birth weight child than those taking iron and folic supplementation. Different literatures support this finding. For instance, the World Health Organization (2012) guideline recommends that daily oral iron and folic acid supplementation as part of the antenatal care to reduce the risk of low birth weight. In addition to this, the study conducted by Passerini, Casey, Biggs, Cong and Montresor (2012) showed that the provision of women with regular weekly iron-folic acid supplemented before pregnancy associated with a reduced prevalence of low birth weight. Sushma, Shila, and Sushil (2018) further indicated that intake of folic acid by pregnant women was strongly related with normal birth weight of children. In sum, both the present and previous studies showed that iron and folic supplement during pregnancy decreases the chance of delivering low birth weight babies.

This study further examined that the odds of babies having low birth weight decreased by a factor of 0.187 for mothers who did not experience pregnancy complications as compared to those mothers who experienced pregnancy complications. This finding is in line with the study that was conducted in Northern Ethiopia (Hailu & Kebede, 2018). This study showed that pregnancy complications were predictors of low birth weight whereas cesarean and instrumental delivery had a positive effect to prevent low birth weight.

In relation to substance use, taking the reference category four or more times, the odds of the mother having low birth weight babies was decreased by a factor of 0.031 for mothers not taking substances at all compared to mothers taking substances four or more times. This shows that substance use adversely predicted the odds of birth weight of newborns. Previous studies conducted on the issue at hand are in line with the findings of the present study. For instance, the study conducted by Bailey and Diaz-Barbosa (2018) revealed that maternal substance use during pregnancy was becoming an increasing social problem with adverse prenatal and neonatal outcomes. Licit and illicit drug use during pregnancy was reported to have equal harmful effects on the newborns. On top of this, the study conducted by Shankaran, Lester, Das, Bauer, Bada, Lagasse and Higgins (2007) corroborated the findings of the current study. These researchers suggested that ongoing use of alcohol and tobacco had been affecting childhood behavior. Intra Uterine Growth Restriction (IUGR) status at birth impacts the risk of hypertension in childhood. It is also clear that substance use during pregnancy has physical and mental health implications beyond childhood.

Conclusions and Implications

Based on the findings obtained from this study, the following major conclusions were drawn. Generally, mothers having better educational status were less likely to deliver low birth weight babies. Considering gestation period, high gestation period is negatively associated with low birth weight of children. The present study also indicated that mothers who were not taking iron and folic supplementation were more likely to deliver low birth weight babies as compared to mothers who were taking iron and folic supplementation. Similarly, mothers who had no pregnancy complications were less likely to have low birth weight babies as compared to mothers who had pregnancy complications.

The above findings have far-reaching implications for various stakeholders with regard to the problem of low birth weight of newborns. Scholars said that the child is the man as the morning is the day. This implies early developments (from conception to birth) are important for later development of the child. Researches documented that birth weight specifically low birth weight has a significant effect on later life outcomes such as educational attainment and learning. Hence, early intervention programs or special care for LBW children in school could be an effective means of improving educational outcomes and the behavior of these children.

On top of the above implications, childcare centers should undertake prevention and intervention strategies to reduce low birth weight of newborns. They can also create awareness among pregnant mothers how to take care their neonates by avoiding different hazardous things such as substance use (licit or illicit substance use). Besides, Early Childhood Care and Education professionals should prepare maternal guidance and counseling programs that elaborate all maternal conditions connected with childbirth weight. On top of these, health professionals need to teach pregnant mothers on the importance of taking iron and folic supplementation. They should also convince mothers to avoid the use of drugs during pregnancy time unless they are ordered to do so concerned health professionals. Besides, they need to advise pregnant mothers to attend ANC follow up without interruption until they give birth to their babies.

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