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The 23rd Annual Research Conference Abstract Booklet

Mulu Aderie Alemu
aderiemulu@gmail.com

Nikki Lynn Rogers
Wright State University - Main Campus, nikki.rogers@wright.edu

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COMPILED BY: MULU ADERIE ALEMU (BA, MBA)
Research Team Liaison Officer
aderiemulu@gmail.com
+251911871711
Preface

The 23rd Annual Staff-Student Research Conference of University of Gondar will be held on June 21 and 22, 2013 at Science Amba auditorium of the University. Staff members, postgraduate and senior undergraduate students of the University, invited guests and speakers will participate in the conference. The annual conference of the University is meant to share experiences in research activities among juniors and seniors, staff and students, and invited guests. It is also meant to motivate students and young faculty to engage in research and also to initiate and strengthen interdisciplinary collaborations. The findings of the studies and the resulting recommendations are expected to be used in solving the diverse societal problems we have been facing.

Research activities at the University of Gondar are primarily aimed at solving societal problems. In line with this, the University of Gondar has developed prioritized research thematic areas to fundamentally change the research activities at the University level. The identified research thematic areas are expected to enable most research undertakings to solve community problems through development oriented community service, technology transfer, and skill and knowledge generation. It is worthy of note that our university is located in a unique topographic setting in Ethiopia which enables its faculty and students to look into the diverse societal problems which need the fruits of inquisitive minds. This has recently been witnessed by the huge number of research proposals submitted by the faculty for funding to the University and by the large number of research abstracts submitted for presentation in the University and elsewhere.

The office for Vice President for Research and Community Service of University of Gondar would like to thank all involved in the realization of the research conference.
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A: Research proposals submitted and granted in the year 2011/12 and 2012/13

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III. Research trends in UoG

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Figure 2: Budget allocated for Research Undertakings 2004/5-2012/13

Figure 3: Research Ethics review progress 2007/8-2011/12
I) INTRODUCTION

Undertaking creditable researches and rendering consequential community services has been one of the core tasks at the University of Gondar (UoG) since its inception as Gondar Public Health College and Training Center mainly in the health area. Research at the University has been undertaken by both students and staff members. Formerly, the academic staff members were expected to devote one fourth (25%) of their working time in research and related tasks. These days, however, the academic staff members are anticipated to dedicate 55% of their working time in research and community services of which 40% belongs to research undertakings. In addition, the students carry out researches in partial fulfillments for the requirements of their degrees. Each year, the research works, which are conducted by students and staff members, are presented in the annual staff and students’ research conference of the University. Furthermore, research at the University has been conducted in collaboration with various national and international institutions. In such successful journey, the research works of many of the scholars at the University have been published by reputable scientific journals.

1.1. Purpose Statement, Vision and Values of Vice president for Research and Community Services (VPRCS) of UoG

Purpose Statement of VPRCS

The Vice President for Research and Community Services is enthusiastic in facilitating problem based research undertakings and the delivery of creditable community services based on the needs of the society and disseminates research outputs.

Vision of VPRCS

The vision of VPRCS is aspiring to see the University of Gondar as a prominent institution renowned for its research and community services in the nation.

Values of the VPRCS

- **Quality at all:** we greatly endorse the undertaking of quality researches and community services.

- **Teamwork:** by its nature the organizational structure of VPRCS highly demands team work, i.e., the activity of one is related directly or indirectly with the other. Therefore, we decidedly promote teamwork.

- **Care for partners:** Our goals will be achieved in close collaboration with our partners. Thus, we greatly value our partners.
- **Committed to ethics**: Compliance to legal, social and professional ethics and norms is crucial for our development and goodwill.

- **Creativity and Innovation**: Introducing new working conditions and generating valuable knowledge and technology are the backbones for the success of the Core Process.

- **Proudly community servant**: Serving the community with all paramount efforts will enhance both the living condition of the community and moral satisfaction of the employees in the Office.

1.2 Thematic Areas of University of Gondar

**Theme 1**: Infectious Diseases

**Theme 2**: Maternal and Child Health

**Theme 3**: Nutrition Related Issues

**Theme 4**: Environmental and Occupational Health and Safety/ Other Public Health Issues

**Theme 5**: Farm and Wild Animals Health

**Theme 6**: Veterinary Public Health

**Theme 7**: Animal Production and Productivity; Socio-economic and Institutional Issues

**Theme 8**: Water, Energy, Environment Management and Development Issues

**Theme 9**: Information, Communication and Construction Technology

**Theme 10**: Designing, Manufacturing, Industrial Automation, and Quality Control

**Theme 11**: Science and the Society

**Theme 12**: Crop Production and Protection

**Theme 13**: Rural Development and Agricultural Extension

**Theme 14**: Livelihoods and Development

**Theme 15**: Tourism, Hospitality and Resource Management

**Theme 16**: Business, Finance and Marketing

**Theme 17**: Socio-cultural and Socio Economic Development Issues

**Theme 18**: Psychosocial Issues and Mental Health

**Theme 19**: Legal System, Judiciary and Human Rights

**Theme 20**: Quality of Education
II) ABSTRACTS

Plenary 1: Communication for Development: A Critical Need in Africa

Robert Agunga*

Dr. Robert Agunga, a native of Ghana, is associate professor in the Department of Agricultural Communication, Education and Leadership (ACEL), College of Food, Agricultural and Environmental Sciences (CFAES) at The Ohio State University. He is also Director of the Center for African Studies at OSU. He can be reached at:
Agunga.1@osu.edu

ABSTRACT

At the start of formal development aid in the 1960s it was felt that communication was central to the development process. Sixty years later, questions are still being asked: What is communication and how can it bring about lasting development in Africa? The speaker will argue that over the last 30-40 years, African governments and international aid organizations have created a sound environment for real development to occur. First, development policy has focused squarely on poverty reduction. Second, although money is an insatiable resource and more will always be needed, it is safe to argue that funding for development projects and programs has been reasonable, and can be increased if these projects were making sound progress. Third, technological innovations in agriculture, health and allied areas, which smallholder farmers can adopt to improve their condition, are plentiful. The main stumbling block has been how to bring about smallholder farmers' participation in development programming; how to facilitate integration among development partners to ensure holistic development; and how to strengthen the capacities of grassroots extension workers in their role as development facilitators. These issues fall under what is generally called the "human dimension" in development and they are communication in nature.

The World Bank and Food and Agriculture Organization of the United Nations in their 2007 policy report titled World Congress on Communication for Development: Lessons, Challenges, and the Way Forward stated that "communication is integral to development and to achieving the Millennium Development Goals. For this reason, it must be built into development planning and embedded in strategies for poverty reduction, health planning and governance" (p. xxvii). This presentation argues that the challenge to using communication for development can be understood by looking at the communicators in development. Who are they? What is their training? How well do they understand the development process? The speaker will argue that whereas the development process, as represented by Integrated Rural Development Programs (IRDPs) of yesteryears and now, Poverty Reduction Strategy Programs (PRSPS), are becoming increasingly complex, and grassroots extension workers, the infantry brigades of development, lack the sophistication to cope with this increasing complexity of development programming.
Communication for Development (C4D) has become a post-graduate curriculum for preparing communication strategists for development. Maybe the University for Gondar, with its strong emphasis on community outreach and engagement, will consider offering a Master's degree in C4D. You will be the first university in Africa to do so and you will be placing your country and Sub-Saharan Africa on the path to sustainable development and you will be ensuring aid effectiveness.
ABSTRACT

Background: Mother to child transmission of HIV/AIDS during pregnancy, delivery, breast feeding and weaning are major sources of HIV-infection in children. Without treatment, one third of children with HIV will die of AIDS before their first birth day; half of them die before celebrating their second birth day. Hence, assessing mortality and associated factors among children born to HIV-infected women is of paramount importance.

Objective: To assess mortality and associated factors among children born to HIV-infected women in public Hospitals in North Gondar, Northwest Ethiopia.

Methods and materials: Institutional based cross-sectional study was conducted from March, to May, 2013 in North Gondar Zone. Data were collected from 422 HIV-positive mothers by face-to-face interview using a pretested and semi-structured questionnaire after verbal informed consent. Data were entered into Epi-Info version 3.5.3 and exported to SPSS Version 20.0 for further analysis. Bivariate analysis was employed to see relationship between explanatory variables. Predictors having p-value<0.2 in Bivariate analysis were included in the multivariate model. Odds ratios and their 95% confidence intervals were calculated. P-value of ≤0.05 was considered in the multivariate model.

Results: The mean (standard deviation) age of the mothers was 29.5 ±4.7 years ranging from 20 to 45 and 349 (82.7%) were urban dwellers. Of the total 422 children, 292 (69.2%) were 24 months and above aged, 75 (17.8%) of children were died and 42 (56%) of died children were males. Age of child (AOR=0.01), late age at weaning (AOR=3.48), birth order (AOR=0.09), low maternal CD4 count (AOR=0.34), preterm gestational age (AOR=0.13), history of previous child loss (AOR=0.19) were significantly associated with mortality of children.

Conclusion and recommendation: the prevalence of mortality in children born to HIV-infected mothers was high and it may indicate a hidden burden in children. Both maternal and children factors were highly associated with children mortality. Weaning child according to the WHO recommendations was good protector of child mortality.

Key words: Mortality, HIV-infected, Weaning, North Gondar
CMHSA 2: Rapid Diagnosis of Tuberculous Pleuritis and Lymphadenitis with Immunocytochemical Detection of Mycobacterium tuberculosis Complex antigen, MPT64

Agerie Tadelel,1,2*, Aster Tsegaye3, Asaye Birhanu3, Abraham Aseffa2, Jemal Hussien2, Lisbet Siviland4, Amsalu Belete5, Tuffa Gemechu6, Demissew Beyene2
1University of Gondar, 2Armaure Hansen Research Institute, 3Addis Ababa University, 4Haukeland University Hospital & University of Bergen, Norway, 5Tikur Anbessa Specialized Hospital, 6United Vision Medical Service.

1, 2 Department of Hematology and Immunohematology, School of Biomedical and Laboratory Sciences, University of Gondar, P.O.Box: 1157, Gondar, Ethiopia.
tagerie@gmail.com Cell phone number: +251920679190

ABSTRACT

Background: A rapid, sensitive and accurate laboratory diagnosis has paramount importance in cases of suspected extrapulmonary tuberculosis. However, traditional techniques of detection of acid-fast bacilli have limitations.

Objective: The aim of this study was to evaluate the diagnostic ability of immunocytochemical staining for detection of Mycobacterium tuberculosis complex specific antigen, MPT64, from pleural effusions and lymph node aspirates.

Methods: A cross-sectional study was conducted in Tikur Anbessa Specialized Hospital and United Vision Medical Service from December 2011 to June 2012. A total of 51 cases tuberculous pleuritis and tuberculous lymphadenitis and 67 non-TB controls were enrolled. Ziehl-Neelsen (ZN) staining, culture by Lowenstein-Jensen (LJ) medium, cytological examination by Wright staining, IS1081-polymerase chain reaction (PCR) and immunocytochemistry (ICC) with polyclonal anti-MPT64 antibody, complete blood count, HIV screening were performed.

Result: The overall sensitivity and specificity, positive and negative predictive value of ICC was 74, 89, 84 and 82%, respectively. The respective sensitivity, specificity, positive and negative predictive value was 88, 89, 82 and 93% while using IS1081-PCR as a reference method. The case detection of has increased from 13.7% by ZN stain to 19.6% by LJ culture, to 66.7% by cytology and 74.5% by ICC.

Conclusion and Recommendation: We would like to recommend that further studies have to be conducted using monoclonal antibodies including other sites of extrapulmonary tuberculosis. Otherwise, immunocytochemical staining technique is a simple, rapid and accurate method which can be performed in a routine pathology laboratory.
CMHSA 3: Adverse Birth Outcomes of Pregnancy among Laboring Women at Gondar University Referral Hospital, Northwest Ethiopia

Akilew Awoke*, Tadesse Awoke Leta Gedefaw, Bikes Destaw, Dr. Berihun Megabiaw
*Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, Email: akilew24@gmail.com, Tel: +251-918035392, P.O. box 196
Gondar, Ethiopia

ABSTRACT

Introduction: adverse birth outcomes are still major public health problems in developing countries. Complications of adverse birth outcomes like preterm birth are the leading direct causes of neonatal mortality. Increasing attention for preterm birth, stillbirth and low birth weight interventions, alongside increasing investment for mothers, will accelerate progress for these inextricable maternal, fetal, newborn and child health outcomes. Data on the frequency of adverse birth outcomes and their related risk factors are important for planning maternal and child health care services in developing countries including Ethiopia.

Objectives: This study aimed to determine prevalence and associated factors of adverse birth outcomes at Gondar university referral hospital in Northwest Ethiopia.

Methods: Institution based cross-sectional study was conducted in February 2013 at Gondar university referral hospital. Data were collected by face-to-face interview using a pretested and structured questionnaire from 481 laboring women after verbal informed consent. Multiple logistic regressions were fitted and Odds ratios with their 95% confidence interval were computed to identify associated factors.

Results: The mean age was 26.2 (±5.2 SD) years. HIV infection among laboring women was 4.8%. Of the total 481 births, 14.3% were preterm, 11.2% low birth weights & 7.1% still births. Ante partum hemorrhage (AOR: 8.43, 95% CI 1.28-55.34), hypertension (AOR: 9.53, 95% CI 2.06-44.33), history of perinatal death (AOR: 13.90, 95% CI, 3.30-58.53) & ante natal care follow up (AOR: 9.74, 95% CI 2.65 - 35.77) were significantly associated with still birth. Women who had history of either preterm delivery or small baby (AOR: 3.1, 95% CI 1.1- 8.4) & women who had oligohydraminious ((AOR 19.9 95% CI, 2.0- 194.4) were much more likely to have preterm births. Similarly, history of preterm delivery or small baby (AOR: 8.4, 95% CI 2.4- 29.4), gestational age (AOR: 5.5 95% CI 2.6- 11.6) & hypertension (AOR: 5.8, 95% CI 1.8- 19.6) were found to be associated with low birth weight.

Conclusion and recommendation: - Prevalence of adverse birth out comes (still birth, preterm birth and low birth weight) were high and still a major public health problem in
this area. History of perinatal death, history of preterm birth or small baby, ante partum hemorrhage, ante natal care follow up and hypertension were associated factor of adverse birth outcomes. Thus, further enhancements of ante natal and maternal care as well as early screening for hypertension are recommended.

**Key words:** low birth weight, stillbirth, preterm birth, Ethiopia

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**CMHSA 4: Active Trachoma Two Years After Three Rounds of Azithromycin Mass Treatment in Gurage Zone, Cheha District**

Fisseha Admassu¹, Samson Bayu², Abebe Bejiga², Bemnet Amare³*

¹University of Gondar, Collage of Medicine and Health Sciences, Department of Ophthalmology, amarebem6@gmail.com, P.O.Box 196, Gondar, Ethiopia ²Addis Ababa University, Department of Ophthalmology, ³University of Gondar, Collage of Medicine and Health Sciences, Department of Medical Biochemistry.

**ABSTRACT**

**Background:** Azithromycin mass distribution was given to residents of Gurage zone Cheha district in 2004, 2005 and 2006 for three consecutive years with more than 90% coverage. The effect of treatment in the study community was not yet determined.

**Objective:** To assess the effect of azithromycin on the prevalence of active trachoma two years after three rounds of mass treatment of the community at Cheha district, Gurage zone

**Methods:** A multistage stratified cluster random sample, with proportional probability and compact segment sampling method was employed. All subjects were examined for trachoma using the simplified WHO grading system and their households were assessed for trachoma risk factors. Data was analyzed using SPSS for Widows Version 15.0.

**Results:** This survey demonstrated that the prevalence of active trachoma in the study community was 22.8 % (95 % CI 18.24% - 27.36%) that is reduced by 43% as compared to baseline estimates and projections for the districts before Azithromycin distribution. Only 27.6% of the study population had a safe and clean water supply, whereas 42.7% of the visited households had simple pit latrines,

**Conclusion:** Though it was demonstrated that repeated mass oral azithromycin distributions has reduced active trachoma in the community, the prevalence of active trachoma was not negligible; therefore, other trachoma specific control interventions such as fly control program, water supply changes, measures to improve face washing and construction of utilizable latrines that are being implemented through the health extension package has to be strengthened to eliminate active trachoma in the district.

**Keywords:** Active Trachoma; Mass treatment, Azithromycin; Ethiopia
CMHSA 5: Micronutrient Levels and Nutritional status of School Children Living in Northwest Ethiopia

Bemnet Amare*, Beyene Moges2, Bereket Fantahun3, Ketema Tafess2, Desalegn Woldeyohannes2, Gizachew Yismaw1, Tilahun Ayane1, Tomoki Yabutani4, Andargachew Mulu5, Fusao Ota5, Afework Kassu2

1University of Gondar, College of Medicine and Health Sciences, Department of Medical Biochemistry, amare bcm6@gmail.com, P.O.Box 196 Gondar, Ethiopia 2University of Gondar, College of Medicine and Health Sciences, Department of Microbiology, Immunology and Parasitology, Gondar, Ethiopia 3Department of Pediatrics, Addis Ababa University, Ethiopia 4University of Tokushima, Department of Chemical Engineering, Tokushima, Japan 5University of Tokushima, Institute of Health Biosciences, Tokushima, Japan

ABSTRACT

Background: Several micronutrients are essential for adequate growth of children. However, little information is available on multiple micronutrient status of school children in Ethiopia. The present study was designed to evaluate the relationship between multiple micronutrient levels and nutritional status among school children.

Method: In this cross-sectional study, anthropometric data, blood and stool samples were collected from 100 children at Meseret Elementary School in Gondar town, Northwest Ethiopia. Serum concentration of magnesium, calcium, iron, copper, zinc, selenium and molybdenum were measured by inductively coupled plasma mass spectrometer. Anthropometric indices of weight-for-age, height-for-age and BMI-for-age were used to estimate the children's nutritional status. Stool samples were examined by standard microscopic methods for intestinal parasites.

Results: The prevalence of stunting, underweight, wasting and intestinal parasitoses among school children was 23%, 21%, 11% and 18%, respectively. The mean serum levels of magnesium, calcium, iron, copper, zinc, selenium and molybdenum were 2.42±0.32 (mg/dl), 15.31±2.14 (mg/dl), 328.19±148.91 (pg/dl), 191.30±50.17 (pg/dl), 86.40±42.40 (pg/dl), 6.32±2.59 (pg/dl), and 0.23±0.15 (pg/dl), respectively. Selenium deficiency, zinc deficiency and magnesium deficiency occurred in 62%, 47%, and 2% of the school children, respectively. Height-for-age showed significant positive correlation with the levels of copper and molybdenum (p = 0.01) and with the levels of magnesium (p = 0.05).

Conclusion: Deficiencies of selenium and zinc were high among the school children although the deficiencies were not significantly related with their nutritional status. The prevalence of both malnutrition and intestinal parasitism was not negligible. These calls for the need to undertake multicentre studies in various parts of the country to substantiate the data obtained in the present study so that appropriate and beneficial strategies for micronutrient supplementation and interventions on nutritional deficiencies can be planned.

Keywords: School children, nutritional status, micronutrients, Gondar, Ethiopia.
CMHSA 6: Nutritional status, intestinal parasite infection and allergy among school children in Northwest Ethiopia


1 University of Gondar, College of Medicine and Health Sciences, Department of Medical Biochemistry, amarebem6@gmail.com, P.O.Box :196 2 University of Gondar, College of Medicine and Health Sciences, Department of Microbiology Immunology and Parasitology, 3 University of Gondar, College of Medicine and Health Sciences, Department of Epidemiology and Biostatistics, Gondar, Ethiopia, 4 Seto Medical Check Clinic, Takamatsu, Japan

ABSTRACT

Background: Parasitic infections have been shown to have deleterious effects on host nutritional status. In addition, although helmintic infection can modulate the host inflammatory response directed against the parasite, a causal association between helminths and allergy remains uncertain. The present study was therefore designed to evaluate the relationship between nutritional status, parasite infection and prevalence of allergy among school children.

Methods: A cross sectional study was performed involving school children in two elementary schools in Gondar, Ethiopia. Nutritional status of these children was determined using anthropometric parameters (weight-for-age, height-for-age and BMI-for-age). Epi-Info software was used to calculate z-scores. Stool samples were examined using standard parasitological procedures. The serum IgE levels were quantified by total IgE ELISA kit following the manufacturer's instruction.

Result: A total of 405 children (with mean age of 12.09.1±2.54 years) completed a self-administered allergy questionnaire and provided stool samples for analysis. Overall prevalence of underweight, stunting and thinness/wasting was 15.1%, 25.2%, 8.9%, respectively. Of the total, 22.7% were found to be positive for intestinal parasites. The most prevalent intestinal parasite detected was Ascaris lumbricoides (31/405, 7.6%). There was no statistically significant association between prevalence of malnutrition and the prevalence of parasitic infections. Median total serum IgE level was 344 IU/ml (IQR 117-2076, n=80) and 610 IU/ml (143-1833, n=20), respectively, in children without and with intestinal parasite infection (Z= -0.198, P>0.8). The prevalence of self reported allergy among the subset was 8%. IgE concentration was not associated either with the presence of parasitic infection or history of allergy.

Conclusion: The prevalence of malnutrition, intestinal parasitism and allergy was not negligible in this population. In addition, there was no significant association between the prevalence of allergy and their nutritional status, and parasite infection. Further research prospective observational and intervention studies are required to address the question of causality between nutritional factors, parasites, and allergy.

Keywords: Nutritional status; Parasite infection; Allergy; Ethiopia
CMHSA 7: Hypercalcemia in Patients with Tuberculosis and HIV Infections in Northwest Ethiopia

Bemnet Amare1*, Solomon Meseret2, Tomoki Yabutani3, Beyene Moges4, Afework Kassu4

1Department of Medical Biochemistry, College of Medicine and Health Sciences, University of Gondar, amarebem6@gmail.com, P.O. Box 196, Gondar, Ethiopia.
2Department of Biostatistics, School of Public Health, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia. 3The Department of Chemical Engineering, University of Tokushima, Tokushima, Japan. 4Department of Microbiology, Immunology and Parasitology, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia.

ABSTRACT

Objective: To determine incidence of hypercalcemia among TB patients with and without HIV infection before and after anti-TB chemotherapy in tropical settings of Northwest Ethiopia. Method: Serum levels of calcium were determined using an inductively coupled plasma mass spectrometer from all subjects at baseline and from 60 TB patients (34 with HIV co-infection) at the end of an intensive phase of anti-TB chemotherapy. Results: At baseline, significant difference was found between the mean albumin-adjusted calcium levels in TB patients with HIV (11.95±3.72) and controls (9.81±1.59) (P=0.03). Hypercalcemia (serum calcium of > 10.5 mg/dL) was observed in 62.2% and 43.2% of TB patients with and without HIV co-infection, respectively. The serum levels of calcium did not significantly change after anti-TB chemotherapy both in patients with (n = 34) and without (n = 26) HIV co-infection. Conclusion: The present study suggests that TB itself appears not to be responsible for hypercalcemia; however, rates of hypercalcemia are high in TB and HIV co-infected patients in the tropical settings of Northwest Ethiopia but it is rarely symptomatic. Anti-TB chemotherapy does not improve the incidence of hypercalcemia in both groups with HIV co-infection and without.

Keywords: Calcium, Hypercalcemia; Tuberculosis; HIV;
CMHSA 8: Nutraceutical values of the Gluten Free Eragrostis tef: The Staple Food of Ethiopia and its contribution to human health

Bemnet Amare1*, Andargachew Mulu2, Beyene Muges2, Bereket Fantahun3, Le Thi Xuan Thuy4, Fusao Ota5, Tomoki Yabuta6, Sisay Yifru7, Afework Kassu2

1Department of Medical Biochemistry, College of Medicine and Health Sciences, University of Gondar, amarebem6@gmail.com, P.O. Box 196, Gondar, Ethiopia.
2Department of Pediatrics, Faculty of Medicine, Addis Ababa University, P O Box 1176, Addis Ababa, Ethiopia.
3Department of Microbiology, Immunology and Parasitology, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia.
4Department of Pediatrics, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia.
5Department of Earth and Life Environmental Engineering, Graduate School of Advanced Technology and Science, the University of Tokushima, 2-1 Minamijosanjima, Tokushima 770–8506, Japan.
6Department of Pediatrics, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia.

ABSTRACT

Background: Eragrostis tef (known as Tef in Ethiopia) is the smallest grain in the world. It is a unique durable crop that can be grown over a wide range of environmental conditions in Ethiopia. Tef is gluten free and has very high levels of essential amino acids, especially lysine, the amino acid that is most often deficient in grain foods. However, there is hardly any published literature that clearly documents the minerals and trace elements concentrations of Tef. The objective of this study, therefore, was to determine the concentrations of minerals and trace elements in Tef. The objective of this study, therefore, was to determine the concentrations of minerals and trace elements in Tef.

Methods: Tef grains were purchased from local market in Gondar town, Northwest Ethiopia. The grains were grinded with a mill and digested with HNO3 following standard analytical procedures. Minerals and trace elements concentration in Tef flour was determined using inductively coupled plasma atomic emission spectroscopy (ICP-AES) and inductively coupled plasma mass spectroscopy (ICP-MS).

Results: Concentrations of iron, calcium, magnesium, manganese, copper and zinc were 80.9mg/100g, 200mg/100g, 189mg/100g, 4.98mg/100g, 0.649mg/100g and 2.86mg/100g, respectively. The concentrations of sodium in the Tef flour were very low (11.6mg/100g) compared to the estimated average requirement. Potentially toxic elements such as antimony, platinum, cadmium and gold were below their respective detection limits.

Conclusions: Tef is found to be rich in iron, calcium, magnesium, manganese, zinc, copper and other essential trace elements but has very low sodium and the potentially toxic trace elements compared to an equal amount of other grains like wheat, corn, millet, rice and sorghum. This indicates the potential of Tef as useful source of micronutrients. However, further studies on health benefits of the grain are recommended.
CMHSA 9: Quadruple burden of Tuberculosis, HIV/AIDS, Chronic Intestinal Parasitosis and Multiple Micronutrient Deficiency in Ethiopia

Bemnet Amare1*, Andargachew Mulu, Ermias Diro, Afework Kassu

1Department of Medical Biochemistry, College of Medicine and Health Sciences, University of Gondar, amarebem6@gmail.com, P.O. Box 196, Gondar, Ethiopia

ABSTRACT

Human Immunodeficiency Virus (HIV), tuberculosis (TB) and helminthic infections are among the commonest public health problems globally and more importantly in the sub-Saharan African countries, including Ethiopia. Multiple micronutrient deficiencies also known as 'hidden hunger' are an additional burden for these group of population either playing role in the pathogenesis or as an effect but further complicating the course of the diseases and ending up in a vicious cycle of multiple micronutrient deficiencies and infection/disease progression. Infection, in turn, is associated with profound effects on nutritional status resulting from decreased nutrient intake, decreased nutrient absorption, and nutrient losses. As a result, micronutrients, immunity and infection are interrelated. The goal of this review is therefore to provide an overview on the current state of knowledge regarding the “quadruple burden trouble” of HIV and TB, intestinal parasitic infection and multiple micronutrient deficiencies and to describe immune-modulating effects these disorders.

Keywords: Human Immunodeficiency Virus, tuberculosis, intestinal parasitic infection, multiple micronutrient deficiency, Ethiopia.

CMHSA 10: Nutritional Status and Dietary Intake of Urban Residents in Gondar, Northwest Ethiopia

Afework Kassu1, Bemnet Amare2*, Mengesha Admassu3, Andargachew Mulu1

1Department of Microbiology, College of Medicine and Health Sciences, University of Gondar, amarebem6@gmail.com, P.O. Box 196, Gondar, Ethiopia. 2Department of Medical Biochemistry, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia. 3Department of Environmental Health, Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, P.O. Box 196, Gondar, Ethiopia.

ABSTRACT

Background: There is paucity of data on the dietary intake and nutritional status of urban Ethiopians which necessitates comprehensive nutritional assessments. Therefore, the
present study was aimed at evaluating the dietary intake and nutritional status of urban residents in Northwest Ethiopia.

Methods: This cross-sectional community based nutrition survey was conducted by involving 356 participants (71.3% female and 28.7% male with mean age of 37.3 years). Subjects were selected by random sampling. Socio demographic data was collected by questionnaire. Height, weight, hip circumference and waist circumference were measured following standard procedures. Dietary intake was assessed by a food frequency questionnaire and 24-hour dietary recall. The recommended dietary allowance was taken as the cut-off point for the assessment of the adequacy of individual nutrient intake.

Results: Undernourished, overweight and obese subjects composed 12.9%, 21.3% and 5.9% of the participants, respectively. Men were taller, heavier and had higher waist to hip ratio compared to women (P<0.05). Fish, fruits and vegetables were consumed less frequently or never at all by a large proportion of the subjects. Oil and butter were eaten daily by most of the participants. Mean energy intakes fell below the estimated energy requirements in women (1929 vs 2031 kcal/day, P=0.05) while it was significantly higher in men participants (3001 vs 2510 kcal/day, P=0.007). Protein intake was inadequate (<0.8g/kg/day) in 11.2% of the participants whereas only 2.8% reported carbohydrate intake below the recommended dietary allowances (130g/day). Inadequate intakes of calcium, retinol, thiamin, riboflavin, niacin and ascorbic acid were seen in 90.4%, 100%, 73%, 92.4%, 86.2% and 95.5% of the participants.

Conclusions: The overall risk of nutritional inadequacy among the study participants was high along with their poor dietary intake. Hence, more stress should be made on planning and implementing nutritional programmes in urban settings aimed at preventing or correcting micronutrient and some macronutrient deficiencies which may be useful in preventing nutrition related diseases in life.

Keywords: Urban Ethiopia, Dietary Intake, Nutritional status
CMHSA 11: Assessment of Adherence among Children on Antiretroviral Therapy in Gondar University hospital and Gondar Poly Clinic, North west Ethiopia.

Berihun Assefa (BSc, MSc), Tadis Birhane (Bsc. MPH), Anteneh Messele (BSc MPH)
Workie Zemene (BSc, MPH), Nigusie Birhan (BSc, MPH)
Department of nursing, College of medicine and health science,
berihunassefa21@gmail.com, Mobile: +251911-54-23-48, P.O. Box: 196
University of Gondar

ABSTRACT

Introduction: The efficacy of antiretroviral therapy (ARV) in suppressing viral replication and delaying the progress of the acquired immunodeficiency syndrome (AIDS) is related to optimal adherence. Though adherence is a challenge in all HIV infected people who are on ART. It is a special concern in children because of factors relating to children, caregivers, medications and the interrelationships of these factors.

Objectives: The objective of this study was to assess antiretroviral therapy (ART) adherence among children living with HIV in Gondar University Hospital and Gondar poly clinic, North West Ethiopia

Methodology: Institution based, cross-sectional study design was conducted in Gondar University Hospital and Gondar poly clinic pediatrics ART unit and a total of 314 study subjects were included in the study. Adherence to antiretroviral therapy was measured by using both pill count method and self-report. Patients who reported an intake of more than 95% of the prescribed medication were considered to be adherent. Bivariate and multivariate logistic regressions were done to assess factors associated with adherence.

Result: A total of 314 care givers of children responded for the structured questionnaire making the response rate of 91.8%. Out of the respondents 230 (73.2%) were females and 84 (26.8%) were males giving a sex ratio of 2.74:1. The mean and the median age of the primary care givers were 37.77± 13.05 and 35, respectively. A total of 176 (56.1%) males and 138 (43.9%) female children’s were participated in the study through their care givers with the mean (SD) and median ages of 9.45 ± 3.34 and 10 years respectively. The overall ART adherence among children found to be 98.7% by using self report assessment method and 94.3%) though pill count methods. Except age of children and status disclosure; other variables were not found to be significantly associated with ART adherence.

Conclusion and Recommendation: The magnitude of adherence in the health institution is promising and encouraging the service delivery system as well as health professionals is important to make it sustainable in turn to achieve a better treatment outcome and prevent treatment failure.

Key words: Adherence, Antiretroviral therapy, children
ABSTRACT

Objectives: To establish the prevalence of depression and describe associated factors among women with symptomatic Pelvic Floor Disorders (PFD) who visited the gynaecologic outpatient clinic of the University of Gondar referral hospital, North-West Ethiopia.

Methods: A cross-sectional study was conducted on 306 women with one or more of the advanced pelvic floor disorders who attended at the gynaecologic outpatient clinic of Gondar university referral hospital in the six months data collection period. All eligible women were included consecutively. A structured questionnaire was used to obtain socio-demographic data and medical histories for all consenting patients. Interviews were done by a female midwife nurse. Depression measures were obtained using the Beck’s Depression Inventory (BDI) tool administered by the midwife nurse after intensive training. Data were entered into a computer using Epi Info version 3. 5.3 and then exported to SPSS version 20 for analysis. Multiple logistic regressions were fitted and Odds ratios with 95% confidence intervals were calculated to identify associated factors.

Results: Of the 306 women interviewed, 269 had advanced pelvic organ prolapse (stages 3 and 4), 37 obstetric fistula of whom four were also recto-vaginal fistula. All four women with both faecal and urinary incontinence, 97.0% those with urinary incontinence due to fistula and 67.7% of those with advanced pelvic organ prolapse (stages 3 and 4) had symptoms of depression as screened by the Beck’s Depression Inventory tool. Depression was significantly associated with age older than 49 years of age (P<0.01), currently not married (P<0.05), having history of divorce (p<0.01), self perception of severe problem (P<0.05), and stage 3 than stage 4 pelvic organ prolapse (P<0.01).

Conclusion: Women with advanced pelvic organ prolapse, and obstetric fistula had high prevalence of symptoms of depression. A holistic management approach, including mental health care and social and family support, is recommended for women having such severe forms of pelvic floor disorders.

Keywords: Depression, Pelvic Organ Prolapse, Obstetric Fistula, Ethiopia
CMHSA 13: Study on Pattern of Injury and Associated Factors in Patients Visiting the Emergency Department of Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia

Bewket Tadesse

1Addis Ababa University, College Of Health Science, Department Of Emergency Medicine

ABSTRACT

Background: Injury can be defined as damage caused by acute transfer of energy, whether physical, thermal, chemical or radiant, that exceeds the physiological threshold of the body. Even though the whole world acknowledges injury as a major public health problem, little attention has been given to it in the developing world like African countries but its contribution to the health burden of any nation is significant. This study describes the pattern of injuries and associated factors in patients visiting the Emergency Department of Black Lion Hospital, Addis Ababa, Ethiopia.

Methods: Institutional based prospective study design with a systematic random sampling technique was employed to investigate the objective of this study. The source population was all injured patients in the study site. Study period was from February 1- April 30, 2013. Data was collected through the use of injury surveillance guidelines form which is developed by experts in 2001 after modification. A computer program, SPSS version 16, was used in the analysis of the data.

Results: Of the three hundred and twenty one patients included in this study, there were 251 (78.2%) males and 70(21.8%) females, yielding a ratio of 3.58:1. More than 41% of patients were aged between 20 and 29 followed by 30-39 (18%) years of age. The most frequent mechanisms of injury were road traffic injuries, comprising 38.3% of all injury followed by stuck/hit by a person or object 31.5% and fall 21.2%. In the analysis, it is found that odds of injury of assault to be increased for males (P= 0.037, AOR, 2.528, 95%CI (1.058-6.037), patients with a monthly income less than 650 Ethiopian birr is significantly associated with injury of assault {(P= 0.002, AOR 2.919 , 95% CI (1.493-5.705)};those reporting there age as less than 40 years old is significantly associated with injury of assault {(P= 0.004, AOR 3.271 ,95%CI (1.451-7.375)) and injury of assault is 61% less likely to be occurred in rural areas than the urban dwellers {(P= 0.002, AOR O .39395%CI (.219-.707)) as well as being a passenger is 89% less likely to have injury of interpersonal conflict than being a pedestrian. {(P= 0.033, AOR 0.109 95% CI (0.014-.833)}

Conclusion: In this study, the overall magnitudes of injury in patients visiting the ED were 32.5 % which is high. The most frequent mechanisms of injury were road traffic injuries (38.3%), followed by stuck/hit by a person or object (31.5% from which 22.4% were assault) and fall were the third one (21.2%).In agreement to similar studies made, road traffic accident affects 26.8%, 16.3% and 13.8% of the civil servants, unemployment citizens and traders respectively. Appropriate interventions to reduce the
occurrences of injuries should be instituted by the local authorities and other responsible body. There is also a need to educate the community members particularly risk groups on how to prevent injuries.

**CMHSA 14: The Assessment of Treatment Response of Epileptic Patients at Chilga Health Center, North Gondar Administrative Zone, Northwest Ethiopia From 2011-2011**

*Demewoz Tadesse, Dessie Yirdaw, Ayeneh Yirde, Gashaye Tagele, G/Tsadik H/Mariam, Wubetu Albachew and Zekarias Yitbark

*Institute of Public Health, Tel: +251918033336, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

**Background:** Epilepsy is the world most common neurologic disorder affecting approximately 50 million people worldwide. It is the second most prevalent non-traumatic neurologic disorder in Africa next to infection of central nervous system. The population prevalence of epilepsy varies across countries from 0.5% to 5%. In Ethiopia the rural community has very poor knowledge of the cause and the nature of epilepsy.

**Objective:** The main objective of this study was to assess the treatment response of epileptic patients following at Aykel health center for the last one year.

**Methodology:** Cross sectional study was conducted through a secondary data collected from May 25 to May 10/ 2012 at Aykel health center Chilga woreda.

**Result:** In our study sample majority of them (66.4%) were between the age of 16-50 years for which most of them experience 1st seizure (41.9%) and diagnosed for the 1st time as epilepsy (52.1%). Most of them were single (55%) coming from rural area (74.9%) with male predominance (55.5%). Among the documented no. of seizures before treatment most of them (11.4%) were having >2seizures. But, after treatment the no. of seizures become <2(62.6%) with seizure free for greater than a year (75.8% with p-value= 0.0001) and greater than a month before the last follow up time (93.8% with p-value= 0.14) with stastically significance. Most of the epileptic patients were treated for 6-10years (31.8%) & almost all of them use Phenobarbitone with different dose adjustment being diagnosed as PGTCS (94.3%). Duration of epilepsy and seizure type did not affect seizure control.

Most of the patients charts lack documentation on risk factors of epilepsy, follow up with neurosign chart, drug adverse effect &reason for drug withdrawal.

**Conclusion and recommendation:** From our result we concluded that there is good seizure control after starting treatment with Phenobarbitone and/or phenytoin which is an indicator of good treatment response attributed to most of the patients coming to follow
up were adults from rural areas. We recommend ministry of health to strength the health system services by allocating trained physician with adequate drug supply.

**CMHSA 15: Increasing parasitological failure rate of visceral leishmaniasis to Sodium Stibogluconate among HIV co-infected patients in East Africa**

_Ermias Diro¹,², Lutgarde Lynen², Rezika Mohammed¹, Marleen Boelaer², Asrat Hailu³, Johan van Griensven²_

¹University of Gondar, Ethiopia; ²Institute of Tropical Medicine, Antwerp; ³Addis Ababa University School of Medicine, Ethiopia;

**ABSTRACT**

**Introduction:** VL is a neglected disease with limited available drugs for its treatment. Sodium stibogluconate (SSG) has been the mainstay of treatment for VL for several decades and still is being used widely in resource-limited settings where Liposomal Amphotericin B (AmBisome⁶) is not often available.

**Objectives:** To describe the patient characteristics and treatment outcomes of parasitologically confirmed VL-HIV co-infected adults

**Methods:** HIV co-infected VL patients undergoing screening for a secondary prophylaxis trial and treated with SSG; (initial treatment 20 mg/kg for 30 days) were included. For those failing to achieve parasitological cure at 30 days, the duration of treatment was extended. AmBisome was given in case of severe SSG intolerance.

**Results:** Of the total of 57 patients treated with SSG between Nov 2011 and April 2012, 24 (42.1%) were relapsed cases and 36 (63.2%) were already on ART. The median age was 32 years, the majority (98.2%) were male. Median CD4 count at VL diagnosis was 61 cells/μL (IQR 35 – 101 cells/μL). The tissue _leishmania_ parasite load at diagnosis was +4 or more in 73.2% of the patients. Initial treatment outcomes at day 30 were: cure: 25 (43.9%), parasitological failure: 17 (29.8%), treatment discontinuation (intolerance): 6 (10.5%); death: 8 (14%); default/unknown: 1 (1.8%). Seventeen patients (40.5% of those who completed 30 days treatment) required treatment for more than 30 days; and by the end of treatment, the final outcomes were: cure: 43 (75.4%), parasitological failure: 3 (5.3%); death: 9 (15.8%); default/unknown: 2 (3.6%). Severe SSG intolerance was seen in 14 (24.6%) of cases; requiring either temporary (n=8 (15.1%) or permanent interruption (n=5 (9.4%). SSG-toxicity probably contributed to 6 of the deaths.

**Conclusion:** High parasitological failure rate of 29.8% was observed on standard SSG treatment course, requiring treatment extension. Even though most of the previous studies have not clearly documented parasitological response to SSG treatment, a trend of increasing parasitological failure was observed in the region. Additionally, SSG is highly
toxic. Hence, we recommend the urgent need for alternative treatment options like combination therapy for VL/HIV co-infection in the region.

CMHSA 16: Intent to stay in the nursing profession and associated factors among nurses working in 5 referral hospitals, Amahara regional state, Ethiopia

*Eshetu Haileselassie, Kefyalew Addis, Anteneh Messele
*Department of Nursing, College of Medicine and Health Sciences, 0918785917, eshet143@gmail.com, University of Gondar

ABSTRACT

Introduction: Nurses are immensely essential in any health care delivery system especially to meet the health related millennium development goals. However, the proportion of nurses who had intent to stay in the nursing profession was low in previous studies.

Objective: The purpose of this study was to assess intent to stay in the nursing profession and associated factors among nurses working in 5 referral hospitals; Amhara Regional State, Ethiopia.

Methods: Institution-based quantitative cross-sectional study was conducted among 389 nurses from April 8 to May 5, 2013. Stratified random sampling was used to select the study subjects. Data were collected by pretested and structured self-administered questionnaire. Descriptive statistics was used to summarize variables like socio-demographics. A multiple logistic regression model was created to predict intent to stay in the nursing profession.

Results: Nearly 92% of nurses returned the questionnaires. The proportion of nurses who had intent to stay in the nursing profession was 39.8%. Age 40 and above (AOR [95% CI] 4.49 [1.58-12.77]), being married (AOR [95% CI] 1.99 [1.04-3.84]), having bachelor degree in nursing (AOR [95% CI] 2.22 [1.18-4.16]), satisfaction with: autonomy and professional opportunities (AOR [95% CI] 2.62 [1.16-5.89]), scheduling (AOR [95% CI] 3.42 [1.56-7.47]), and pay and benefits (AOR [95% CI] 8.78 [4.50-17.14]); high continuance commitment (AOR [95% CI] 2.45 [1.26-4.78]) and high normative commitment (AOR [95% CI] 3.68 [1.87-7.23]) were statistically significant predictors of intent to stay in the nursing profession.

Conclusion and recommendation: Intent to stay in the nursing profession was low. Satisfaction with pay and benefits was the strongest predictor. This finding could be a reasonable cause of concern for the regional health bureau and the respective hospitals to
think about retention mechanisms. Increasing independent clinical decision making capacity of nurses and revising the current salary and duty payments are recommended.

CMHSA 17: Prevalence and Associated Factors of Low Back Pain among Pregnant Women Attending the Antenatal Clinic at University of Gondar Hospital

*Eskedar Abebe Yehuala

*Department of physiotherapy, College of medicine and health science, School of medicine

University of Gondar, eskedarpt@gmail.com, Cell phone: 0911631473, Po box 1081, Gondar, Ethiopia

ABSTRACT

Background: Low back pain (LBP) is one of the most common problems associated with pregnancy. Low back pain in pregnancy may be severe enough to cause significant pain and impaired physical functioning. No evidence is found that attempts to determine the magnitude and the risk factors of low back pain among pregnant women in Ethiopia.

Objective: To assess the prevalence and associated factor of low back pain among pregnant women who are attending antenatal clinic at University of Gondar Hospital.

Methods: Institutional based cross-sectional study was conducted among pregnant women who were attending the antenatal clinic from March 18- April 30, 2012. A total of 304 pregnant women were interviewed using structured questionnaire. Verbal Analog Scale was used to determine severity of the pain and disability rating index was used to determine physical functioning. Logistic regression was used to analyze the data. A 95% confidence interval with p<0.05 was taken.

Results: Of 304 pregnant women, 101(33.2%) experienced low back pain during their current pregnancy. Less than half (30.7 %) of the pregnant women began experiencing Low back pain during the third trimester. Pain was most frequently felt over the back area (86.1%), buttock (5%) and (8.9%) in both areas. The severity of Low back pain during pregnancy was described mostly as being moderate (39.6%).Half (50.5%) of women with low back pain reported sleep disturbances secondary to the pain. Most (48.5%) of the pregnant women with low back pain complained impaired physical functioning. A history of low back pain (AOR= 3.653 CI 95%:1.764, 7.565) and Low back pain during previous pregnancy (AOR= 2.295 CI 95%:1.028, 5.123), were significantly associated with low back pain during pregnancy

Conclusion: This study revealed the prevalence of low back pain among pregnant women attending ANC at UoG hospital, Gondar, Ethiopia. One third of the pregnant
women complained low back pain during pregnancy. History of low back pain and low back pain during previous pregnancy were factors significantly associated with low back pain during current pregnancy. Antenatal care providers should consider assessing the presence of back pain during pregnancy. And physiotherapy department should establish referral system and provide exercise training program for pregnant women with low back pain.

CMHSA 18: Comparison of treatment outcomes of tuberculosis patients with and without HIV in Gondar University Hospital: a retrospective study

*Firehiwot Cheru, Dessalew Mekonen, Tibebu Girma, Yeshambel Belyhun, Chandrashekhar Unakal, Mengistu Endris, Feleke Moges*

*School of Biomedical and Laboratory Sciences, University of Gondar*

**ABSTRACT**

**Background:** Tuberculosis is one of the most common infectious diseases that threaten people living with HIV. It causes a lot of obstacles in diagnosis, and it can significantly affect the course of HIV infection.

**Objective:** the aim of the study was to compare the treatment outcome of tuberculosis patients in HIV positive and HIV negative patients.

**Material and methods:** Between Sep 2002 to Aug 2003 all tuberculosis patients enrolled in DOTS clinic of the University of Gondar Hospital were collected retrospectively from the TB registration book. We compared the data for TB patients of HIV positive and negative subjects. Medical records of the patients were reviewed for age, gender, address, category, and type and treatment outcome.

**Results:** A total of 1168 tuberculosis patients were registered at Gondar University teaching hospital between September 2002 - August 2003. 637 (54.5%) were urban residents and 531 (45.5%) patient were rural resident. 153 (13.1%) patents were smear positive pulmonary tuberculosis, 678 (58.0%) were smear negative pulmonary tuberculosis and the rest were extra pulmonary tuberculosis 337 (28.9%). We evaluated 1168 registered patients, of these, 385(67%) were HIV positive patients, 190(33%) were HIV negative patients and 593(50.8%) of the total 1168 patients were not tested for HIV. The overall treatment success rate was 294 (59.3%) and failure rate 202 (40.7%) of tuberculosis patients with and without HIV. 87 (50.9%) treatment success was observed in HIV positive patients. Whereas, the treatment success rate was recorded in HIV negative and non-tested TB patients were 44 (45.8%) and 163 (71.2%) respectively.
Conclusion and Recommendation: - The treatment outcomes of tuberculosis patients with and without HIV in Gondar University Hospital showed the treatment success rate was 59.3%, which is increased compared to previous years.

Key Words: Tuberculosis, Treatment outcome

CMHSA 19: Assessment of knowledge, attitude and practice and associated factors towards palliative care among nurses working in selected hospitals, Addis Ababa, Ethiopia

*Hiwot Kassa
Email: hiwotkassa21@gmail.com

ABSTRACT

Background: To provide quality care at the end of life or for chronically sick patients, nurses must have good knowledge, attitude and practice about palliative care (PC). In Ethiopia PC is new and very little is known about the type of services offered and the readiness of nurses to provide PC.

Objective: To assess nurses’ knowledge, attitude and practice and associated factors towards PC at selected hospitals in Addis Ababa, Ethiopia.

Materials and methods: A cross sectional quantitative study design was carried out on 341 nurses working in selected hospitals at Addis Ababa from January to May 2012. Systematic random sampling was the method employed to select two governmental and two non-governmental hospitals. The researchers had made their efforts in triangulating the study through the instruments made use of: Frommelt’s Attitude Toward Care of the Dying (FATCOD) Scale, Palliative Care Quiz for Nursing (PCQN) and practice questions. Hence, the reliability of the data was managed. EPI-INFO and SPSS software statistical packages were applied for data entry and analysis.

Result: Of the total 365 respondents a response rate of 341 (94.2%) was registered. Out of the total study participants 104 (30.5%) had good knowledge and 259(76%) had favorable attitude towards PC. Medical and surgical wards and training on PC were significantly associated with knowledge of nurses. Institution, individuals level of education, working in medical ward and the training they took part on PC were significantly associated with the attitude the nurses had. Nurses working in Hayat Hospital (nongovernmental) had a 71.5% chance of having unfavorable attitude towards PC than those working in Black Lion Hospital (governmental). Regarding their knowledge aspect of practice, majority of the respondents 260(76.2%) had poor implementation, and nearly half of the respondents had reported that the diagnosis of patients was usually performed at the terminal stage. In line with this, spiritual and
medical conditions were highly taken into considerations while dealing with terminally ill patient, hence 108(31.7%) and 41(12%) of nurses had attempted to manage chronic pain by morphine and codeine, respectively.

**Conclusion:** The nurses had poor knowledge and knowledge aspect of practice, but their attitude towards PC looked favorable. To this end, due attention should be given towards PC by the national health policy and needs to be incorporated in the national curriculum of nurse education. Besides, those nurses who are working in hospitals and other health institutions have to be trained to successfully attain the preset goal of the country in the health sector.

**CMHSA 20: Death and Seeking Alternative Therapy Largely Accounted for Lost To Follow-up of Patients on ART in Northwest Ethiopia: A Community Tracing Survey**

*Mamo Wubishet*

*College of medicine and health sciences, University of Gondar*

**ABSTRACT**

**Background:** Antiretroviral treatment programs in sub-Saharan African countries are highly affected by loss to follow-up. Tracing patients lost to follow-up and understanding their status is essential to maintain program quality and to develop targeted interventions to prevent loss to follow-up.

**Method:** A lost to follow-up community tracing survey was conducted to determine the reasons, outcomes and factors associated with loss to follow-up at the University of Gondar Hospital, northwest Ethiopia. All patients’ homes were visited to ascertain outcome status for lost to follow-up (death and non-death losses).

**Result:** Among the four hundred eighty-six successfully traced, death was the most common reason accounting for 233 (47.94%) of the lost to follow-up. For 253(52.06%) of the non-deaths losses, the main reasons for loss to follow-up were stopped antiretroviral treatment due to different reasons 135(53.36) and relocation to another antiretroviral treatment program by self-transfer 118(46.64). The most common reason for stopping care was preference for traditional medicine and/or holy water 75(55.56%). The rate of mortality in the first six months was 72.12 per 100 person-years (95% CI: 61.80-84.24) but this sharply decreased after 12 months to 7.92 per 100 person-years (95% CI: 4.44-14.4). Baseline clinical characteristics were strongly associated with mortality.

**Conclusion:** Death accounts for about half of the lost to follow up. Most deaths occur in the first six months of loss. Seeking alternative therapy is another major reason for loss to
follow up. Early tracing mechanisms are necessary to prevent death. It is also important to address patients' needs to transfer to other treatment centers by providing referral on request. Addressing the issues on concurrent use of alternative therapy can also substantially reduce loss to follow up.

Key words: Antiretroviral therapy, Loss to follow-up, Tracing, Ethiopia

CMHSA 21: Predictors of Quality of Life among HIV Patients attending ART clinics in Northwest Ethiopia: A Prospective longitudinal study
*Mamo Wubishet

*College of medicine and health sciences, University of Gondar

ABSTRACT

Background: In treating HIV as a chronic disease, monitoring changes of quality of life of patient's overtime is important for clinicians and policy makers. However, little research attention has been directed towards examining the longitudinal change of quality of life overtime in sub-Saharan Africa

Method: A prospective longitudinal follow-up study was conducted from December 2009 to August 2011 to evaluate the changes in quality of life and how this relates with baseline socio-demographic and clinical characteristics among consecutive adult ART naïve patients attending ART clinic. Quality of life was measured by WHOQOL-HIV BREF.

Result: All quality of life domain scores improved significantly during 12 month follow-up in the ART program. At each follow-up visit, scores were significantly higher than baseline scores (p< 0.001). Predictors of improved quality of life were male gender, disclosure of HIV status, starting ART at higher CD4 and good baseline overall quality of life, whereas predictors poor quality of life were starting ART with advanced disease stage and tuberculosis co-infection.

Conclusion: Our finding is consistent with studies done in developed countries. The finding of the study has implications of starting ART at a higher CD4 and early stage of the disease for better quality of life outcomes.
CMHSA 22: Active Case Finding for Pulmonary Tuberculosis and Detection of Drug Resistance among HIV-infected Patients in Gondar, Ethiopia

Martha Alemayehu1*, Baye Gelaw1, Ebba Abate1, Abraham Aseffa2, Liya Wassie2, Yeshambel Belyhun1, Shiferaw Bekele2, Russell R. Kempker3, Henry M. Blumberg3
1 School of Biomedical and Laboratory Sciences, University of Gondar, 2Armauer Hansen Research Institute, Addis Ababa, 3 School of Medicine, Division of Infectious Diseases, Emory University, USA

* Corresponding author: Martha Alemayehu, E-mail: marthialex2011@gmail.com

ABSTRACT

Background: Patients co-infected with HIV and TB often lack the classic symptoms of pulmonary TB thus making TB diagnosis difficult. Current practice is to wait for symptomatic persons to present for TB screening, which can result in a delayed diagnosis of TB and consequently continued transmission in the community. The global HIV epidemic may be contributing to increase in MDR-TB prevalence.

Objective: To determine the prevalence of undiagnosed pulmonary TB cases through active case finding including MDR-TB, among HIV-infected patients.

Methods: A cross sectional study was conducted from February 2012-November 2012 among HIV-infected patients aged >18 years attending the ART clinic of the UOG hospital. A pre-tested questionnaire was used to collect socio-demographic and clinical data. Sputum samples were collected for direct AFB microscopy and Mycobacteria culture. A PCR based RD9 deletion typing and genus typing was performed from all culture positive AFB isolates and drug-susceptibility testing was done for first line anti-TB drugs keeping SOP’s. Statistical analysis was performed using SPSS Version 20.0 software packages.

Results: Our results showed that out of 250 HIV-infected participants, screened for TB through active case finding, 9(3.6%) were smear +ve /culture +ve and 6(2.4%) were smear -ve /culture +ve. RD9 typing showed that out of 15 isolates 10(66.6%) were M. tuberculosis species, 1(6.7%) belonged to Mycobacterium genus and four isolates were non Mycobacteria. Therefore, a total of 11 undiagnosed pulmonary TB infections were identified. All isolates were sensitive to RIF, INH and EMB. Mono-drug resistance was identified only for STM in one newly diagnosed TB patient and MDR-TB was not observed.

Conclusion and Recommendation: The prevalence of undiagnosed PTB infection among HIV-infected patients in Gondar was 4.4%. Active screening of known HIV-infected individuals for TB, with at least one TB symptom should be considered.

Key words: Drug resistance, Human immunodeficiency virus, Mycobacterium tuberculosis

*Mignote Hailu

*Department of nursing, College of Medicine and Health Science, University of Gondar
P.O.Box: 196, Gondar, Ethiopia, Email elatman_hailu86@gmail.com, Cell phone +251 912013006

ABSTRACT

Introduction: Cervical cancer is the first most common cancer in women in sub-Saharan Africa. In Ethiopia, the incidence of cervical cancer is high, 35.9 per 100,000 women. Low level of awareness, lack of effective screening programs to detect precancerous conditions, overshadowed by other health problems (such as acquired immune deficiency syndrome, tuberculosis and malaria) and insufficient attention to women’s health are the possible factors for the observed higher incidence rate of cervical cancer in the country.

Objective: To explore the knowledge of cervical cancer, its preventive practice and associated factors among nurses in government hospitals.

Methods: A cross-sectional descriptive study was conducted on knowledge and preventive practice of female nurses towards cervical cancer, from October 2010 to May 2011 in Addis Ababa, Ethiopia. The study was conducted in 4 randomly selected government hospitals. The study subject from each hospital was selected by proportional to size allocation. A total of 275 female nurses were selected to complete self administered questionnaire by six trained data collectors and two supervisors. Data was collected on March, 2011. The questionnaires were checked for completeness, cleaned manually and entered in to SPSS windows version 16.0 for analysis.

Results: The finding of the study has indicated that hundred fifty eight (60.8%) nurses had knowledge of cervical cancer but only 57 (21.9%) reported practicing prevention of cervical cancer. Among the socio demographic and profession related factors, marital status and training has a strong and positive association on the knowledge of cervical cancer. In addition, other variables like education, family history, unit of work and ever cared patient with cervical cancer were shown to be significant and positive predictors of knowledge of cervical cancer. Variables like age, experience, being diagnosed with cervical cancer, ever cared patient with cervical cancer and ever visited to health institution were revealed to be significant and positive predictors of preventive practice of cervical cancer.

Conclusion and recommendation: From this finding it is possible to conclude that; more than half of the respondents were Knowledgeable but preventive practice of Nurse’s for cervical cancer was very poor. Consistent and frequent upgrading programs should be implemented; further research has to be done and the policy makers has to pay attention in designing strategies to strengthen nurses awareness on preventive measures.
CMHSA 24: Prevalence and Associated Factors of Goiter among Children Age 6-12 Years Old, Rural Lay Armachiho District, Northwest Ethiopia

*Molla Mesele, Getu Degu, Haimanot Gebrehiwot  
* Dep't of Nutrition, College/faculty/School of PH, CMHS, IPH, University of Gondar P.O.Box 196, molmesele@gmail.com,  0920254664, Gondar, Ethiopia

ABSTRACT

Introduction: Goiter which is indicator of chronic iodine deficiency is a major public health problem for populations throughout the world, particularly for young children. It is a threat to the social and economic development of many developing countries including Ethiopia.

Objective: This study was aimed to assess the prevalence and associated factors of goiter among rural children aged 6-12 years in Lay Armachiho District, Northwest Ethiopia.

Method: A community based cross-sectional study was employed from July to December 2012 in Lay Armachiho district. Multistage sampling was used. A total of 698 children aged 6-12 years were included in the study. Children in each selected households were examined for the presence/absence of goiter using a criteria set by World Health Organization. Iodine content of the salt sample obtained from each household was estimated by using spot testing kits. Both bivariate and multivariate logistic regressions were used to identify associated factors. The degree of association between independent and dependent variables was assessed by using odds ratio with 95% confidence interval. Those variables with p-value of less than 0.05 in the multivariate analysis were considered significant.

Results: Out of 698 study samples, 694 children and their mothers/caregivers were included in the final analysis with a response rate of 99.45%. The prevalence of goiter among rural children was found to be 37.6%. Goiter of grade 1 was 28.5% and that of grade 2 was 9.1%. Prevalence among males and females was 13.4% and 24.2%, respectively. Estimation of iodine content in the salt sample revealed that 29.7% of samples had adequate iodine content (>15 ppm). Multiple logistic regression analysis revealed that age of child (AOR: 1.24, 95% CI: 1.12, 1.36), being female (AOR=1.98, 95% CI: 1.38-2.85), salt iodine level, family history of goiter (AOR=3.18, 95% CI: 2.08, 4.858), fish consumption (AOR=0.42, 95% CI; 0.22, 0.80) and kebele where the child is living where found to be independently associated with goiter.

Conclusion and recommendation: Prevalence of goiter was high and there is a severe IDD in the study communities. Being female, increased age and family history of goiter have increased risk of developing goiter. Fish intake and adequate salt iodine level were protective to goiter. Interventions on prevention and treatment of goiter better if focus on females and elder children. Securing iodised salt use in every household is mandatory. Moreover, promotion of fish intake is highly recommended.

Key words: Goiter, Prevalence, Iodine deficiency, Children, Lay Armachiho
CMHSA 25: Physical functioning and level of independence among HIV infected adults on antiretroviral treatment at the University of Gondar Hospital, Ethiopia

Mulugeta Bayisa1, Mamo Wubshet2, Getahun Asres Alemie3

1 MSC, PT, department of physiotherapy, University of Gondar, College of Medicine and Health, Sciences, Gondar, Ethiopia, § Primary investigator, Cell phone of the primary investigator: 0913365882, E mail: mulophysio@yahoo.com

ABSTRACT

Introduction: With the advent of Antiretroviral Therapy (ART), people living with HIV and AIDS (PLWHA) are living longer with chronicity. Reduced physical functioning and activity limitation reduces quality of life of people living with HIV and AIDS. Objective: The objective of this study was to assess the physical functioning and level of independence among adult outpatients living with HIV and AIDS who are on ART at the University of Gondar Hospital HIV Care Clinic.

Method: An institutional based cross-sectional study was conducted on 313 adults living with HIV and AIDS on ART from March-May 2012. The Short Form-36 physical functioning subscale and the functional assessment index scale were combined to assess physical functioning and level of independence. Norm-based scoring method was used to determine physical functioning.

Result: Among 313 participants, 191 (61%) reported good physical functioning. More than half of the subjects (61%) were independent in work-capacity. Two hundred and nineteen (70%) individuals were independent in mobility and 96.8% in self-care. Good physical functioning was associated with CD4 counts ≥250 cells/mm³ [AOR=1.84, 95% CI:1.02,3.31], excellent general health [AOR=4.14,95% CI:2.12, 7.07], absent or very mild bodily pain [AOR=4.04, 95% CI: 2.03,6.59] and high energy [AOR=7.70, 95% CI: 4.32, 8.52].

Conclusion: This study found that the majority of the subjects had good physical functioning and were independent in self-care activities. However, 30% of the subjects reported different levels of dependence in mobility. Higher CD4 counts, vitality, general health and level of mild bodily pain were the factor determining physical functioning.

The result of this study also necessitates the rehabilitation interventions for PLWHA to focus on issues related to enabling them in all ADL and improving physical functioning.

Keywords: HIV and AIDS, physical functioning, level of independence
CMHSA 26: Prevalence and predictors of maternal anemia during pregnancy in Gondar, North West of Ethiopia: a cross sectional study

Mulugeta Melku, Zelalem Addis, Meseret Alem
*Department of Hematology, School of Biomedical and Laboratory Sciences, College of Medicine and Health Sciences, University of Gondar, E-mail: mulugeta.melku@gmail.com, Cell phone: +251 910 08 45 21

ABSTRACT

Background: Anaemia is a global public health problem with major consequences for human health, social and economic development which assumes eminence in pregnant mother. Even though pregnancy anemia is a multifactorial in etiology and a major contributing factor for maternal morbidity and mortality, the prevalence and its predictors are not well studied in Ethiopia. Therefore, the aim of this study was to assess the prevalence of maternal anemia and its predictors among pregnant women attending antenatal care service at Gondar university hospital, North-west Ethiopia.

Method: Institution based cross-sectional study was conducted from March 1 to April 30, 2012. A total of 302 pregnant women were selected and included in the study using systematic random sampling technique. A Structured pretested questionnaire was used to collect data about socio-demographic, nutritional and obstetrics factors. Clinical history and laboratory tests were also used to obtain data on medical conditions. Bivariate and multivariate logistic regression models were used to identify predictors of anemia.

Result: The overall prevalence of anemia was 16.6%, majority were mild type (64%), and morphologically normocytic normochromic (76%). The prevalence was higher at third trimester (18.9%) compared to second and first. Low monthly family income (AOR [95% CI] =3.1[1.19,8.33]), more than four family size (AOR[95% CI]= 4.14[4.13,10.52]), Hook worm infection (AOR[95% CI]= 2.72[1.04, 7.25]) and living with HIV/AIDS (AOR[95% CI]= 5.75[2.40, 13.69]) were the independent predictors of maternal anemia.

Conclusion and recommendation: The prevalence of anemia was high; mild type and Normocytic normochromic anemias were dominant. Low monthly family income, large family size, Hook warm infection, and living with HIV/AIDS were found to be the independent predictors of anemia. Hence, for pregnant women, efforts should be put early diagnosis and management of HIV and hook warm infection in addition to nutritional counseling with special emphasis for those having low income and high family size.

Key words: Maternal anemia, pregnancy, Prevalence, predictor, Gondar
CMHSA 27: Blood requisition and utilization practice in University of Gondar Hospital, Northwest, Ethiopia, 2013
*Tadesse Belayneh1*, Berhanmeskele Tegene2, Gashaw Messele2, Zewditu Abdissa2, Getachew Sheferaw3

*Department of Medical anesthesiology, College of Medicine and Health Sciences, University of Gondar, Gondar town, Ethiopia. P.O.Box 196, tadbel20@gmail.com, Mobile- 0918-77-74-96*

ABSTRACT

Background: Even though blood ordering is a common practice in medical and surgical filed, the average requirement for a particular procedure is usually based on subjective anticipation of blood loss instead of evidence based estimates. Ordering large quantities of blood of which little is ultimately utilized, creates an artificial shortage in the reserves, wastes valuable technical time, squanders expensive reagent and impose extra expenses on patients. This study was conducted to assess blood requisition and its utilization practice of surgical patients attending University of Gondar teaching Hospital.

Methods: Hospital based cross sectional study was conducted from November to March 2013 in University of Gondar teaching Hospital. Data were collected from all discharged surgical patient’s medical records and blood bank registry books. Blood utilization was calculated using cross-match to transfusion ratio (C/T), transfusion probability (% T) and transfusion index (TI) indices.

Results: During the study period, a total of 982 patients were requested to prepare 1,072 units of blood. Of the 1,072 units cross-matched only 468 units transfused for 286 patients. Of the 200 elective patients for which crossmatching were requested, only 77 patients received blood. Blood transfusion from the unit’s crossmatched was 43.6%. Moreover, the highest C/T ratio was observed in elective surgical patients. The overall ratio of C/T, %T and TI index were 2.3, 47% and 0.77 respectively.

Conclusions and recommendation: The overall blood utilization was encouraging but there were excessive crossmatched blood units and patients with minimal transfusion practice in elective surgical patients. Blood ordering pattern for elective procedures needs to be revised and over ordering of blood should be minimized. Moreover, the hospital with blood transfusion committee, formulate maximum surgical blood order policies for elective surgical procedures and conduct regular utilization auditing.

Key Words: Blood requisition, Blood Utilization, Elective and Emergency surgery.
ABSTRACT

Background: World Health Organization (WHO) estimates that injuries constitute 16% of the global burden of disease. This translates into 5.8 million injury-related deaths. The aim of the study was to determine the magnitude and pattern of injury in Gondar University hospital, 2013.

Methods: Retrospective study was conducted in Gondar university hospital from March to April 2013. All injured patients' charts who visited the hospital from January 1, 2012 to December 30, 2012 were included in the study. One day training was given for three data collectors and one supervisor. The data extraction format was pre-tested on 20 patients' charts and modification has made accordingly. Ethical issue was secured from research and community service core process ethical committee of University of Gondar, College of Medicine and Health Science and permission letter from the medical director of the hospital. Data were entered and cleaned using EPI Info and exported to STATA version 11 for analysis. The results were presented using tables, graphs and texts. Descriptive statistics like frequencies, percentages and means were used to explore the data. Binary logistic regression was used and odds ratio with 95% confidence interval was presented to identify associated factors of the outcome variable. A significance level of 0.05 was taken as a cutoff value for all statistical significance tests.

Results: During the study period a total of 84,254 patients visited the hospital of which 19.7% were surgical cases. Injury accounted 25% of emergency cases. The patients were predominantly young males (82%). Three in five (59.4%) of the injured was within the age range of 15-30 years. About one in three 187(32.2%) and one in four 141(24.3%) of those injured were students and farmers respectively. Injury mechanism for nearly half (48.9%) of students was assault followed by 45.2% of road traffic accident. Intentional injuries occurred among 291(47.24%) cases of which 84.5% were males. Fracture (22.9%) and head injury (17.2%) were the leading outcomes of injuries. Sever injuries accounted about 13% of all cases, of which 55% and 30% were due to assault and traffic accidents respectively.
Conclusion and Recommendation: The magnitude of injury in this hospital was found to be high as compared with other similar settings. Assault and road traffic accident were the two common mechanism of injury. Appropriate prevention strategies should be designed and implemented against assault and road traffic accident.

CMHSA 29: Rate of mortality and change in treatment in a cohort of HIV/AIDS patients in Northwest Ethiopia: A retrospective cohort study

Tadesse Awoke*, Belaynew Wassie†, Berihun Megabiaw‡

*Department of Epidemiology and Biostatistics, College of Medicine and Health Sciences
University of Gondar, +2519-10-17-33-08, t.awoke@yahoo.com, Gondar, Ethiopia

ABSTRACT

Background: Antiretroviral therapy (ART) has transformed HIV/AIDS from a death sentence into a manageable, chronic disease. The aim of this study was to determine the rate of mortality and change in treatment and identify associated factors among HIV/AIDS patients in Northwest Ethiopia.

Method: This was a retrospective cohort study on 1455 treatment-naïve HIV/AIDS patients who started ART between January 2009 and July 2012. Cox-proportional hazards model was fitted to investigate factors that affect survival of patients.

Results: Of 1455 patients at risk 139 and 207 patients were died and changed their treatment respectively. The observed cohort had contributed a median of 18 months (IQR=9-27) of follow up accruing a total of 2313 person-years of observation. The rate of mortality and treatment change were 6.0 and 8.95 per 100 patient-years of follow-up respectively. About 90% of the patients were alive at 20 months and 86.9% at the end of 37 months. Patients who had WHO stage of III and VI were 2.22 and 3.85 times more at risk for death than who were at stage I respectively. Those patients who have CD4 counts greater than 200 cells/mm³ has 0.27 times lower risk of death than those patients who have CD4 count lower than 100 cells/ mm³.

Conclusion and recommendation: The rate of mortality was found to be high in the first year of follow-up after ART initiation. This study also revealed that mortality has associated with advanced clinical stage and lower CD4 cell counts. It has been proved that most patients had these characteristics during ART initiation. Hence, early initiation of ART before diseases progression to severe level is important for patients to improve survival and quality of life.
Keywords: Antiretroviral therapy; Cox-Proportional Hazards model; Ethiopia

CMHSA 30: The Clustering of Smear-Positive Tuberculosis in Dabat, Ethiopia: A Population Based Cross Sectional Study
Takele Tadesse, 1 Meaza Demissie, 2 Yemane Berhane, 2 Yigzaw Kebede, 1 Markos Abebe 3

1 Institute of Public Health, takele_tadesse@yahoo.com, University of Gondar, Gondar, 2 Addis Continental Institute of Public Health, Addis Ababa, 3 Armauer Hansen Research Institute, Addis Ababa, Ethiopia,

ABSTRACT

Background: In Ethiopia where tuberculosis epidemic remains high, studies that describe hotspots of the disease are unavailable. This study tried to detect the spatial distribution and clustering of smear-positive TB cases in Dabat, Ethiopia.

Methods: A population-based cross sectional study conducted at Dabat Health and Demographic Surveillance System site from October 2010 to September 2011 identified smear-positive tuberculosis cases.. Trained field workers collected demographic and location data from each study participant through house-to-house visits. A spatial scan statistic was used to identify purely spatial and space–time clusters of TB among permanent residents.

Result: Two significant (p< 0.001) spatial and space-time clusters were identified in the study district.

Conclusion: Tuberculosis is concentrated in certain geographic locations in Dabat, Ethiopia. This kind of clustering can be common in the country, so the National Tuberculosis Control Program can be more effective by identifying such clusters and targeting interventions.

Keywords: Tuberculosis; clustering; spatial analysis; HDSSs; Ethiopia
Background: Human Immunodeficiency virus infection is a multi system disease. Hematological abnormalities are among the most common complications of HIV/AIDS in children.

Objective: This study was conducted to assess hematological profile and associated risk factors among children who were in pre anti retroviral therapy (ART) and on highly active anti retroviral therapy (HAART) at Felege Hiwot Referral Hospital, Bahir Dar, Northwest, Ethiopia.

Methods and material: A comparative cross sectional study was conducted among children living with human immunodeficiency virus attending at Felege Hiwot Referral Hospital. Systematic random sampling method was used to select the study participants. After full written consent and assent was obtained, socio demographic data was collected using a pre tested and structured questionnaires. Blood was drawn and hematological profile was obtained by performing hematological tests. The data was entered, cleaned and edited, using EPI info version 3.5.2 and was exported in to SPSS version 20 for data analyzing purpose. Descriptive statistics, odd ratio and chi square were used in the analysis. Both univariate and multi variate logistic regression was employed to assess the association between outcome and independent variables on the basis of P value.

Result: The study enrolled 224 Human Immunodeficiency Virus positive participants (112 antiretroviral therapy naïve and 112 on antiretroviral therapies), 56.25% were male, with mean age 7.9 (1-14) years and mean CD4 percentage 26.73±14.22. The prevalence of neutropenia, anemia, leucopenia, and thrombocytopenia among the study children was 21%, 1, 5.2%, 14.7% and 4.9%, in pre-ART respectively and 20.1%, 14.3%, 12.9% and 3.1% were neutropenia, anemia, leucopenia and thrombocytopenia consecutively on HAART. Prevalence of anemia was increased statistically significant with severity of immune suppression (P=0.032) and Gastroenteritis was found to be the only risk factor for anemia in multivariate logistic regression (AOR= 4.00, 95% CI:10-14.53, P=0.05). Leucopenia was associated with being female sex (AOR=0.512, 95% CI 0.27-0.98, P=0.044), and oral esophageal thrush (AOR=5, 95% CI 1.6-16.9).

Conclusion: Hematologic abnormalities were common problems among the children in pre ART and On HAART. Therefore, this indicates that the importance of the investigation of hematological abnormality among children living with HIV/AIDS, especially in low CD4 count and those in ART naïve is recommended.
CMHSA 32: Antenatal Care Service Utilization and Influencing Factors in Dabat District: Community based cross sectional study

Yewunetu Dessalegn1§, Tadesse Awoke2*, Belaynew Wassie3* Tatek Abate4*
1Department of Nursing, College of Medicine and Health Sciences, University of Gondar, yewune@gmail.com, P.O.Box - 196, Gondar, Ethiopia, §Corresponding author

ABSTRACT

Background: Complications of pregnancy and childbirth are the leading causes of disability and death among women in the reproductive age group in developing countries. Reducing child mortality and improving maternal health will not be achieved without utilization of antenatal care services. Utilization of antenatal care services is associated with improved maternal and neonatal health outcomes. This study was aimed to assess antenatal care service utilization and influencing factors among pregnant women in Dabat District.

Methods: A community based Cross-sectional study was conducted among 801 women within 12 months of post delivery irrespective of the outcome of pregnancy selected by systematic random sampling. A pretested and structured questionnaire was used for data collection through interview. Data were entered using EPI info version 3.5.3 statistical software and analyzed using SPSS version 20 statistical package. Descriptive statistics was used to describe the study population in relation to relevant variables. Bivariate and multivariate logistic regression was also carried out to see the effect of each independent variable on the dependent variable.

Result: Three hundred twenty four (35.8%) of the mothers used antenatal care services at least once during their most recent pregnancy. Most mothers (80.9%) started utilizing antenatal care services in their second and third trimester of pregnancy. Mothers attending high school and beyond [AOR=3.76, 95% CI=1.61,8.78], coming from urban areas [AOR=2.91, 95% CI=1.72, 4.93], whose husband has positive attitude [AOR=7.91,95%CI=4.31,14.49], having annual income >=3800 birr [AOR=2.26, 95% CI=1.31,3.88] and had previous experience of health problem [AOR=2.35,95%CI=1.67,3.30] were more likely to use antenatal care services

Conclusion: Antenatal care service utilization was found to be low in the study area. Ministry of health has to focus on health information on timing of antenatal care service through health extension workers.

Keywords: Antenatal care service, pregnancy, Dabat.
CMHSA 33: Physicians and Nurses Satisfaction with Clinical Laboratory Service of University of Gondar Hospital, North West Ethiopia

Zelalem Addis*, Wubet Birhan, Dejene Derseh, Biruktawit Sahle, Netsanet Gizaw
*School of Biomedical and Laboratory Sciences, College of Medicine and Health Sciences, University of Gondar, P.O.Box 196, Telephone +251-912-060902, zelalemaddis@ymail.com, addiszelalem151@gmail.com Gondar, Ethiopia.

ABSTRACT

Background: Physicians and nurses are among the primary customers of laboratory services and obtaining their feedback provides laboratory managers with opportunities to identify areas for improvement.

Objective: To assess Physician’s and nurses satisfaction on Gondar university hospital laboratory services

Method: A cross sectional study was conducted in Gondar University Hospital to assess physicians and nurses satisfaction on the service provided by the laboratory.

Results: A total of 196 nurses and physicians were involved in the study. Overall level of satisfaction was 51.1% for nurses and 51.5% for physicians. Lack of consistency in the quality of laboratory work, absence of timely report of panic results, turnaround time of a test, acceptability of results released and reporting of reference ranges with test results were areas that were mentioned as sources of dissatisfaction.

Conclusion: The study showed wide room for improvement. In addition to taking intervention root causes of dissatisfaction need to be investigated and means of improving the satisfaction level should be designed and implemented.

Key words: Customer satisfaction, Laboratory service, Quality improvement
CMHSA 34: Type and frequency of pre-analytical errors in Gondar University Hospital Laboratory

*Zelalem Addis, Wubet Birhan, Biniam Mathewose, Agersew Alemu

*CMHS, School of Biomedical and Laboratory Sciences, addiszelalem151@gmail.com or zelalemaddis@ymail.com, Tele: +251-912-060902, University of Gondar, Ethiopia

ABSTRACT

Background: The clinical laboratory is the epicenter of the health care sector and laboratory data are an integral, often pivotal, part of the complex decision making process, influencing up to 70% of medical diagnoses. However, up to 0.5% of all laboratory test-results have estimated to be erroneous and it has been noticed that as much as 93% of errors encountered within the entire diagnostic process is largely due to lack of standardized procedures in the pre-analytical phase of quality assurance.

Objective: To assess the frequency of pre-analytical errors in Gondar University hospital.

Methods: This study was a cross sectional study that involved prospective evaluation of request papers and samples send to university of Gondar hospital laboratory for hematological and clinical chemistry analysis. Data was collected by laboratory professionals and summarized in to different categories of pre-analytical quality indicators.

Results: A total of 1533 (750 for hematology and 783 for clinical chemistry) samples with their respective request papers were evaluated in this study. In general none of the request papers contain all the information they should contain. One or more of patient identification parameters were missed in 8.7% of the request papers. Name of the requesting physician and address of the sender were missed from 44.5% and 6.5% of the request papers. None of the requesting physicians mentioned the clinical information of the patients. Examination of the samples showed that 1.02%, 2.8% and 0.98% of the samples were hemolyzed, insufficient for analysis and clotted respectively.

CMHSA 35: Sub-acute Renotoxicity Study of Khat (Catha edulis) in Rats

Zewdneh Shewamene*, Ephrem Engidawork

Department of Pharmacology, School of Pharmacy, College of Medicine and Health Sciences, zeedshow@gmail.com, +251913061415, University of Gondar

ABSTRACT

Background: Khat use has been reported to produce significant acute and chronic toxic effects including oxidative damage of cellular macromolecules such as DNA, lipids and...
proteins contributing to the development of several pathologies. The central nervous system, cardiovascular system and the liver complications were strongly associated with khat administration in rats. However, the effect of khat induced changes in the kidney has not yet been worked out in details.

**Objective:** The aim of this study was to investigate if khat administration has a potential to cause renotoxicity in rats.

**Methods:** Forty healthy Sprague Dawely rats of both sexes, each weighing 170-210 g, were divided into five experimental groups of eight animals and khat was administered in different doses (100 mg/kg, 200 mg/kg and 400 mg/kg) orally for ten days. Gentamicin 100 mg/kg intraperitoneally was given for other groups and served as a positive control. Animals were killed by light ether anesthesia and blood and renal tissue were used to measure renal markers, including creatinine, blood urea nitrogen, antioxidant enzymes as well as markers for lipid peroxidation using established protocols. In addition, histopathological changes were evaluated using hematoxilin-eosin staining techniques.

**Results:** Administration of khat at high dose (400 mg/kg) significantly caused marked renal dysfunction as evidenced by significantly (p<0.05) increased serum creatinine, blood urea nitrogen and MDA level compared to control animals. Superoxide dismutase and catalase enzymatic activities were decreased significantly (p<0.05) compared to control animals.

**Conclusion:** The present study indicated that sub-acute administration of khat induced mild to moderate renal damage in rats. This finding may serve as a baseline data to extrapolate renal complications following khat chewing in humans.

**Key words:** creatinine, blood urea nitrogen, superoxide dismutase, catalase, Malondialdehyde, khat, Rat

**CMHSA 36: Audit on pre-operative fasting of elective surgical and Obs-Gyn patients at the University of Gondar teaching Hospital, Northwest Ethiopia, 2013GC.**

*Endale G/Egziabher*, Vidhya Nagaratnam

*Dep’t of anaesthesia, College=GCMHS, School of medicine, endalege@yahoo.com, +251-910-88-117, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

**Introduction:** Preoperative fasting is a must before anaesthesia. The main reason for preoperative fasting is to reduce the gastric volume and acidity, and thus decreasing the
risk of pulmonary aspiration. However, the preoperative fasting is usually prolonged beyond the recommended time (6hrs) due to various reasons.

Prolonged fasting has many adverse effects such as hunger, thirst, irritability, headache, dehydration, hypoglycaemia, delayed awakening after anaesthesia and poor patient outcome after operation. Despite this, sometimes patients fasted for prolonged time when surgery is delayed due to different reasons at the University of Gondar hospital operation theatres.

**Objective** -the objective of this clinical audit was to assess the duration of pre-operative fasting in patients who were scheduled for elective surgery at the University of Gondar Hospital operation theatres, 2013 GC.

**Methods:** Study design and period  -a quantitative cross-sectional study design was used and the study was conducted from March18-April10, 2013GC.
Audit population and sample  -all 43 patients who were operated during the study period under anaesthesia were included.

Data collection-checklist was used for data collection and patients were interviewed after 24hours after operation.

**Result** -of 43 patients, 35 were adults and 8 were children respectively. The minimum, maximum and mean fasting hours for food were 5, 96 and 19.60 respectively and more than 50% of the patients fasted twice longer than the recommended time for food.

The minimum, maximum and mean fasting hours for fluid were 5, 19 and 12.72 respectively. More than 95% of the patients fasted for fluid longer than the recommended fasting time.

**Conclusion** -majority of patients fasted for both food (92%) and fluid (95%) longer than the fasting time recommended by AAGBI, ASA, RCOA and RCN fasting guidelines.

Recommendations -anaesthetists, surgeons and operation theatre nurses should revise operation lists everyday in the operation theatres and resuscitate the patients accordingly when surgery is delayed due to different reasons.
Preoperative fasting guideline should be developed and implemented at the University of Gondar hospital.
Keywords: Preoperative, fasting, fluid, food
CMHSA 37: Assessment of the level of postoperative patient handover practice of final year anaesthesia students at the University of Gondar Hospital recovery room and gyn-obs wards, Northwest Ethiopia

Endale G/Egziabher, Niguse Yigzaw, Amare Demissie, Dereje Hailu, Abebe W/Selassie, Endeshaw Admassu, Kiber Temesgen, Markos Tezera, Tezera Gessesse

ABSTRACT

Introduction: Patient handover is the transfer of professional responsibility and accountability for the care of patients to another professional group on a temporary or permanent base. The aim of patient handover is to provide a high-quality and appropriate clinical information to the coming healthcare professionals.

Postoperative patient handover to the recovery room and gyn-obs wards staffs is one of the main parts of the anaesthetists’ duty that includes the transfer of information about preoperative, intraoperative and postoperative condition of the patients. In addition to qualified anaesthetists, anaesthesia students are also expected to handover all the relevant information to nurses, interns and residents after operation. But, sometimes we saw gaps in the transfer of patient information at the University of Gondar Hospital recovery room and gyn-obs wards by graduating anaesthesia students.

Objective: The objective was to assess the level of postoperative patient handover practice of final year anaesthesia students and to improve the continuity and quality of post operative patient care.

Methods: Study design and period
A quantitative cross-sectional study design was used and the study was conducted from March 18–May 7, 2013 GC. Source population - all final year anaesthesia students at University of Gondar, department of anaesthesia. Study population - all final year anaesthesia students who were involved in patient handover during the study period. Data collection procedure- students were observed while they were handovering the patients using standardized checklist at recovery room and obs-gyn wards.

Results: A total of 31 and 25 students were involved in postoperative patient handover during the first and second phases of data collection periods respectively. Of these, four students who handovered patients in the presence of qualified anaesthetists were excluded from the study.

Conclusion: Although, postoperative patient handover guideline was posted in the operation theatres, recovery room and gyn-obs wards, there was a big gap in the transfer of information by the majority of students before intervention.

Recommendations: The department of anaesthesia should incorporate postoperative patient handover in undergraduate course and should use strategies that may enhance the implementation of guidelines.
Keywords: Postoperative, anaesthetic, patient handover, recovery room, gyn-obs wards

CMHSA 38: Isolation and characterization of multiple drug resistance bacterial pathogens from waste water in hospital and non-hospital environments, Northwest Ethiopia

Feleke Moges1*, Mengistu Endris1, Yeshambel Belyhun2,3, Walelegn Worku4
1*Department of Medical Microbiology, College of Medicine and Health Sciences, , Mosesfeleke@gmail.com, +251918778160, University of Gondar

ABSTRACT

Background: The importance of bacterial isolates from waste water environment as a reservoir of antibiotic resistance and a potential source of novel resistance genes to clinical pathogens is underestimated. This study is aimed at to isolate and characterize public health important bacteria from waste water in hospital and non-hospital environments and evaluate the distribution of multiple drug resistance bacteria in the study area.

Methods: A cross-sectional study was conducted at Gondar from January-June 2012. The hospital waste water was taken from different sections of the Gondar University Teaching Hospital. Non-hospital environment samples were taken at different sites of the university campuses, Gondar College of Teachers education, and soft drink factory in Gondar. Samples were aseptically collected, transported and processed with in two hours following standard procedure. Identified organisms were assessed for different antibiotics following Kirby-Bauer disk diffusion method. All data was registered and entered in to SPSS version 16 computer program. Proportions were compared by using chi-square test and p-values less than 0.05 were taken as statistical significance.

Result: A total of 60 waste water samples were processed for the presence of drug resistance pathogens. Among the total samples 113 bacterial isolates were recovered and of these 65 (57.5%) were from hospital environment and 48 (42.5%) were from non-hospital environment. The most frequently identified bacterium was Klebsiella spp. 30 (26.6%) followed by Pseudomonas spp. 19(16.8%), E. coli (11.5%) and Citrobacter spp (11.5%), and Staphylococcus aureus (8.2%). The over all prevalence of multiple drug resistance (MDR) in this study was 79/113 (69.9%). MDR in hospital environment was found to be 53/68 (81.5%) while in non hospital environment was found to be 26/48 (54.2%).

Conclusion and recommendation: Multiple drug resistance to the commonly used antibiotics is high in the study area. The contamination of waste water by antibiotics or other pollutants lead to the rise of resistance due to selection pressure. The presence of antibiotic resistance organisms in this waste water should not be overlooked. Since this organisms may be vital to the safety and well-being of patients who are hospitalized and individual susceptible to infection. Therefore, proper waste water treatment plant should be established and improved sanitary measure should be practice.
CMHSA 39: Knowledge and Perceptions of Healthcare professionals towards adverse drug reaction reporting in Gondar University Hospital, North West Ethiopia

Wubshet Hailu¹, Dejene Mengesha, Diriba Feyisa, Endalkachew Taye.
¹Department of Pharmacology, College of Medicine and Health Science, School of Pharmacy, wubhil@gmail.com, +251911985393, P.O.Box: 196, University of Gondar

ABSTRACT

Background: Reporting adverse drug reactions (ADRs) spontaneously is considered as a cornerstone of Pharmacovigilance. However, its success depends on co-operative and motivated health care professionals. It is the responsibility of the healthcare professionals to detect, investigate, manage and report adverse drug reactions.

Aim of the study: The aim of this study was to determine knowledge, attitudes and practices of healthcare professionals (doctors, nurses and pharmacists) regarding the ADR reporting.

Methods: The study was a descriptive quantitative cross sectional study. A questionnaire was used to collect data from the healthcare professionals. Data were collected on demographic characteristics of the healthcare professionals, their knowledge, attitudes and practices towards ADR reporting. Data analysis will be conducted using SPSS (Version 19). A test of association of selected variables has been done using Pearson chi-square and logistic regression analysis to measure the association.

Result: More than half of the participants were male i.e. 66.7% and 38.6 % of the respondents were within age range of 20-30 years. 36% of the respondents indicated that they do not know how to report ADRs. There was no significant difference in terms of knowledge by age category. Only few of the healthcare professionals have ever sent their ADR forms to the FMHACA. 96% felt that reporting of ADR can benefit the public health, 72% felt that filling of the ADR yellow form is useful and 82% felt that ADR should be compulsory.

Conclusion: This study revealed that 36 % of the respondents did not have the knowledge of how to report ADRs. Healthcare professionals had a positive attitude towards ADR; 82% of them said that ADR reporting should be compulsory. Healthcare professionals' knowledge can be improved through educational interventions and trainings.
CMHSA 40: Assessment Of Health Related Quality Of Life And Associated Factors Among People Living With Human Immunodeficiency Virus With Highly Active Antiretroviral Therapy At Felege Hiwot Referral Hospital, Bahir Dar, Amhara National Regional State, Northwest, Ethiopia

Aemiro Yenealem¹, Amsalu Feleke², Solomon Meseret³ and Getachew Kahsu⁴
¹Department of Public health, Joint MPH Program Bahirdar University & GAMBY College Of Medical Sciences, aemirovenealem@yahoo.com or getakahsu@yahoo.com, 0913129089, P.O.Box 641, Bahir Dar, Ethiopia

ABSTRACT

Introduction: HIV/AIDS epidemic is now a global disaster, constituents one of the most alarming challenges to development and social advancement. Quality of life refers to the adequacy of people’s material circumstances and their feeling about these circumstances. The level and extent to which clinical parameters and socio demographic factors influence the health related quality of life of people living with HIV/AIDS on antiretroviral therapy have not been studied in our set up. Hence to fill this gap and in view of the national ART scale up program, assessing the health related quality of life would be timely in identifying obstacles and to recommend possible solutions.

Objective: This study was conducted to assess health related quality of life and associated factors among HIV positive people at Felege Hiwot Referral Hospital Bahir Dar, Amhara National Regional State, Northwest, Ethiopia.

Method: Institutional based cross-sectional study was conducted among adult human immunodeficiency virus positive patients who are on follow up at Bahir Dar Felege Hiwot referral Hospital. Systematic sampling was used to select the study participants and a total of 424 participants were involved in the study. Patients who provided written informed consent undergo to interview using pre tested and structured questionnaires to collect data. Clinical variables of HAART group were collected from their hospital charts. Data was entered into EPI info version 3.5.1 and analyzed using SPSS version 20. Descriptive statistics was calculated and Logistic regression models were used to determine the effect of various factors on quality of life.

Result: The proportion of respondents with low QoL was highest in the domain of social relationship (40.3%), physical health domain (63.7%), mental health domain (44.6%), cognitive functioning domain (55.7%), health distress (66.7 %) and vitality (41.3%) of HQoL. Bivariate analysis revealed that the overall perception of QoL was better in the respondents living in lower age, higher CD4, who were employed and married, good adherence and being working. The perception of overall health was higher in male, all respondents less than 35 years of age.

Conclusion/Recommendation: A majority of the respondents were with low Quality of Life (QoL). Factors associated were found unemployment, higher age, being single and widowed. These findings highlight the need for enhanced support and a better environment for improving the health related quality of life among people living with HIV.
CMHSA 41: Determination of Antidiarrhoeal Properties of *myrtus communis* L.(myrtle) 85 % Methanolic leaf extract in mice.

*Tatek Mulugeta*

*Department of pharmacology, college of medicine and health sciences, Gondar University*

**ABSTRACT**

Diarrhoea is one of the principal causes of death in the infants, particularly in developing countries. An array of medicinal plants with anti-diarrhoeal properties has been widely used by the traditional practitioners; however, the efficacy of many of these anti-diarrhoeal conventional medicines has not been scientifically evaluated. Hence the present study was undertaken to explore anti-diarrhoeal activity of *Myrtus communis* L. leaves extract.

Swiss Albino mice of either sex weighing 25-30 g were used for study and anti-diarrhoeal activity was evaluated by intestinal motility and castor oil-induced diarrhoea model.

The phytochemical profile from methanolic extract of the *Myrtus communis* L.indicated the presence of terpinoides, tannins, and flavonoids. Neither lethal effects or any visible clinical signs of general weakness were observed within 24 h after the administration of the extract to the mice up to 1g/kg dose. The methanolic extract of the *Myrtus communis* L. leaves, at the doses of 50, 100 and 200 mg/kg, reduced the total number of faeces as well as diarrhoeic faeces in a dose dependent manner and the results were statistically significant (p<0.001). The extract also displayed statistically significant decreases (p<0.001) in weight and volume of intestinal content by involvement of PG synthesis. Further, the intestinal motility was observed and the change became significant at 100 mg/kg and 200 mg/kg dose that inhibited the motility by 43.07±3.38 % and 38.39±6.23 53.2%, respectively.

On the basis of these findings, it can be assumed that *Myrtus communis* L. leaves has antidiarrheal activities, supporting previous claims that its traditional use can treat gastrointestinal disorders and it could be a potential source for novel ‘lead’ discovery for antidiarrhoeal drug development. Further studies are needed to completely understand the mechanism of anti-diarrhoeal action of *Myrtus communis* L. leaves as well as safe use.
**CMHSA 42: In-Vivo Anti-Inflammatory and Anti-Nociceptive Activities of Aerial Part Extracts Of Zehneria Scabra**

Baye Akele*

*University of Gondar, College of Medicine and Health science, Department of pharmaceutical chemistry, Email: bayebusam@gmail.com.

**ABSTRACT**

Inflammatory diseases including different types of rheumatic diseases are very common throughout the world. Inflammatory disorders are a major course of morbidity for the working force throughout the world. It is believed that current analgesia-inducing drugs, such as opiates and non-steroidal anti-inflammatory drugs (NSAIDs) are not useful in all cases, because of their side effects and low potency. Therefore the search for new analgesic and anti-inflammatory compounds has been a priority of drug researchers. In line with this notion the anti-inflammatory and antinociceptive activities of *Zehneria scabra* (Cucurbitaceae) was determined. Plant material was extracted with 80% using maceration and then activities were performed in vivo using acetic acid and carrageenin for antinociceptive and anti-inflammatory activity respectively. The plant extract showed significant analgesic activity at doses of 50,100 and 200 mg/Kg, and it also showed remarkable anti-inflammatory activity at 100,200 and 300 mg/Kg. Hence, it is easy to conclude that 80% methanol extract of *Zehneria scabra* exhibit antinociceptive and anti-inflammatory activities.

**Key words:** Antinociceptive, Anti-inflammatory, *Zehneria scabra*, maceration, and Dose

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**CMHSA 43: Comparison of treatment outcomes of tuberculosis patients with and without HIV in Gondar University Hospital: a retrospective study**

Firehiwot Cheru, Dessalew Mekonen, Tibebu Girma, Yeshambel Belyhun, Chandrashekhar Unakal, Mengistu Endris, Feleke Moges

School of Biomedical and Laboratory Sciences, University of Gondar

**ABSTRACT**

**Background:** - Tuberculosis is one of the most common infectious diseases that threaten people living with HIV. It causes a lot of obstacles in diagnosis, and it can significantly affect the course of HIV infection.

**Objective:** - the aim of the study was to compare the treatment outcome of tuberculosis patients in HIV positive and HIV negative patients.
Material and methods: Between Sep 2002 to Aug 2003 all tuberculosis patients enrolled in DOTS clinic of the University of Gondar Hospital were collected retrospectively from the TB registration book. We compared the data for TB patients of HIV positive and negative subjects. Medical records of the patients were reviewed for age, gender, address, category, and type and treatment outcome.

Results: A total of 1168 tuberculosis patients were registered at Gondar University teaching hospital between September 2002 - August 2003. 637 (54.5%) were urban residents and 531 (45.5%) patient were rural resident. 153 (13.1%) patents were smear positive pulmonary tuberculosis, 678 (58.0%) were smear negative pulmonary tuberculosis and the rest were extra pulmonary tuberculosis 337 (28.9%). We evaluated 1168 registered patients, of these, 385(67%) were HIV positive patients, 190(33%) were HIV negative patients and 593(50.8%) of the total 1168 patients were not tested for HIV. The overall treatment success rate was 294 (59.3%) and failure rate 202 (40.7%) of tuberculosis patients with and without HIV. 87 (50.9%) treatment success was observed in HIV positive patients. Whereas, the treatment success rate was recorded in HIV negative and non-tested TB patients were 44 (45.8%) and 163 (71.2%) respectively.

Conclusion and Recommendation: The treatment outcomes of tuberculosis patients with and without HIV in Gondar University Hospital showed the treatment success rate was 59.3%, which is increased compared to previous years.

Key Words: Tuberculosis, Treatment outcome

CMHSA 44: The Assessment of Treatment Response of Epileptic Patients at Chilga Health Center, North Gondar Administrative Zone, Northwest Ethiopia from 2011-2011

Demewoz Tadesse, Dessie Yirdaw, Ayenew Yirde, Gashaye Tagele, G/Tsadik H/Mariam, Wubeta Albachew and Zekarias Yitbark

Institute of Public Health, Tel: +251918033336, University of Gondar, Gondar, Ethiopia

ABSTRACT

Background: Epilepsy is the world most common neurologic disorder affecting approximately 50 million people worldwide. It is the second most prevalent non-traumatic neurologic disorder in Africa next to infection of central nervous system. The population prevalence of epilepsy varies across countries from 0.5% to 5%. In Ethiopia the rural community has very poor knowledge of the cause and the nature of epilepsy.
Objective: The main objective of this study was to assess the treatment response of epileptic patients following at Aykel health center for the last one year.

Methodology: Cross sectional study was conducted through a secondary data collected from May 25 to May 10/ 2012 at Aykel health center Chilga woreda.

Results: In our study sample majority of them (66.4%) were between the age of 16-50 years for which most of them experience 1st seizure (41.9%) and diagnosed for the 1st time as epilepsy(52.1%). Most of them were single(55%) coming from rural area (74.9%) with male predominance(55.5%). Among the documented no. of seizures before treatment most of them (11.4%) were having >2seizures. But, after treatment the no. of seizures become <2(62.6%) with seizure free for greater than a year (75.8% with p-value= 0.0001) and greater than a month before the last follow up time (93.8% with p-value= 0.14) with stastically significance. Most of the epileptic patients were treated for 6-10years (31.8%) & almost all of them use Phenobarbitone with different dose adjustment being diagnosed as PGTCS (94.3%). Duration of epilepsy and seizure type did not affect seizure control.

Most of the patients charts lack documentation on risk factors of epilepsy, follow up with neurosign chart, drug adverse effect & reason for drug withdrawal.

Conclusion and recommendation: From our result we concluded that there is good seizure control after starting treatment with Phenobarbitone and/or phenytoin which is an indicator of good treatment response attributed to most of the patients coming to follow up were adults from rural areas. We recommend ministry of health to strength the health system services by allocating trained physician with adequate drug supply.

CMHSA 45: Determination of Some Toxic Heavy Metal Accumulation in Medicinal Plants Commonly Used in Gondar Zuria district, Northwestern Ethiopia

Tadele Atinafu*

*Department of Pharmaceutical Chemistry, tadeleatinafu@gmail.com, +251911380460, School of Pharmacy, CMHS, University of Gondar

ABSTRACT

In Ethiopia up to 80% of the population uses traditional medicine. Medicinal plants are contaminated with environmental pollutants especially heavy metals, which pose a great health risks upon long term exposures. Hence, this work was done to determine the level of three most common and toxic metals in medicinal plants commonly used in Gondar Zuria district. The concentrations of selected heavy metals were determined in medicinal plant samples using FAAS and GFAAS (for Cd and Pb) and Hydride generation atomic
absorption spectrometer (for As) after they were digested following already developed method. The accuracy of the analytical procedures was evaluated by performing spike recovery tests. The percentage recoveries were from 85 - 105%. The concentrations of the metals detected in the samples ranged from 0.03 – 2.06, 0.001 – 6.75, and 0.002 – 35.97 mg of metal per kg of sample for As, Cd, and Pb respectively. Over all, the present study showed that out of ten samples analyzed eight for Arsenic (80%), seven for cadmium (70%) and three for Lead (30%) of the analyzed samples were found to contain concentrations above maximum WHO permissible limit( 1, 0.3 and 10 mg/kg respectively) which showed possible risk of toxic effect of the studied metals.

Key words: Heavy metals, Medicinal plants, Atomic absorption spectrometer, Arsenic, Cadmium, Lead
PART II: FACULTY OF BUSINESS AND ECONOMICS

FBEA 1: Assessment of the Performance of Ethiopian Financial Institutions
Abebaw Kassie, Meseret Milargh, Shewit Kinfe, Mintesinot Adnew
Department of Accounting, Faculty of Business and Economics, University of Gondar

ABSTRACT
The financial system plays a pivotal role in economic activities in any country. Thus it is vital to determine the status and assess the financial health of the financial system and take corrective policy measures continuously. The objective of the paper is to evaluate the status of financial and banking system in Ethiopia. Descriptive statistical tools like percentages, growth rates, mean values and comparisons using ANOVA and Kruskal-Wallis tests have been used. Ethiopian financial sector in general and The Banking Sector in particular is performing well from year to year in terms of assets, deposits, loans and equities owned in the study period. Financial intermediation has increased during the study period as measured by Total Financial Assets to GDP, Financial System Deposits to GDP, Loans to GDP and Loans to Deposits. Ethiopia can be characterized as a least developed economy registering highest rate of economic growth. The financial sector is not that much developed in Ethiopia. Hence, the financial system needs to be developed to support the economy well.

FBEA 2: Creating Successful Malls - The Raaga of Retail Reality
Edukondala Rao Jetti*
*Dept. of Marketing Management, Faculty of Business & Economics, University of Gondar, Ethiopia, North-East Africa. kondalarao007@yahoo.co.in

ABSTRACT
Retailing in India is galloping towards becoming the next vibrant industry. The emergence of new formats and the evolution of modern retail in India have attracted attention in recent years. Organized retailers in India are trying out a variety of formats, ranging from discount stores to supermarket to hypermarkets to specialty chains. It seems like a quirk of circumstance, that malls have sprung up all over urban India in anticipation of a consumption boom that may itself prove to be eventually truant.

Increasingly, the verve of the modern Indian economy is anchored in the growing buying power and affluence of the country's domestic consumers. Customer's choice of a particular store depends on shopping orientation as well as satisfying experience. A trend of shopping with entertainment is gaining momentum. In addition, a customer's attitude
towards the store may result from his / her evaluation of the perceived importance of store attributes, molded and remolded by direct experiences with the store's overall offerings. It has been well established that the amount of time a customer spends in the store depends on how comfortable they are in the store. The longer the retailer can keep a customer in their store, the more the customer will buy.

Indeed, the key imperative facing retailers in India is that of creating robust, scalable supply chains that would facilitate their rapid spread across the country. Availability of quality retail space will be a key determinant for the growth of the sector. The other big issue for retailers is people. Analysts agree that the manpower shortage will get acute as retail spreads beyond the metros.

Henceforth, this paper would discuss the strategies that would set the survivors apart like location, value-added services, private labels, customer loyalty programmes, retailer-manufacturer tie-ups, state-of-the-art supply chain infrastructure, global sourcing, ability to read shifting trends, etc.

**Keywords:** retailing, organized retail, shopping mall, consumer, consumerism, shopping behavior, loyalty, store attributes, etc.

**FBEA 3: Women in informal food and local beverage trade: its challenges and prospects**

Asegid Demissie1*, Eniye Dargie1, Baymot Taddese1

1*Department of Management, Faculty of Business and Economics, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

The purpose of this study is to identify the conditions and the challenging factors that affect women engaged in urban informal food and local beverage businesses. A sample of 123 women from three towns (Gondar, Bahirdar, and Debretabor), Amhara National Regional State, Ethiopia were randomly selected. Adapted study instrument, Scheduling is used to collected data through enumerator. The findings of the study revealed that 81 percent of the respondents were single, widows or divorced. They started the business for survival. The result of their activities is only hand to mouth. Their business is mainly stagnant or don't show growth (56.9 %). But only 2.4 percent have a desire to quit and other 29.5 percent to change their business. Most of their customers are very poor and destitute part of the society and can't afford to buy their basic needs from formal businesses. The main challenges of informal food and beverage businesses are higher cost of material (82.1%), too many competitors (84.6%), lack of finance/capital (71.5%), lack of sufficient training and advice (74.8%), and expensive house rent (69.1 %). Our suggestion is policy makers and development practitioners should take care of the petty informal food and beverages business, instead of the formals that will take care themselves.

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FBEA 4: Assessment of the Effectiveness of Internal Audit System in Public Higher Educational Institution: The case Study of University of Gondar, Bahir Dar and D/Markos Universities

Gardachew Worku, Abey Zewge, Deribew Kenubih

ABSTRACT
The main purpose of the study was to identify factors impacting the effectiveness of internal audit services in public higher educational institutions of Amhara region. Based upon a case study of a large public sector higher educational institution in Ethiopia, the paper examines how internal audit quality, management support, organizational independence, and internal audit staff quality, influence internal audit effectiveness. The study was continued to three public universities; Gondar University, Bahir Dar University, and Debremarkos University. All the internal auditors, vice-presidents, procurement and finance directors, budget and plan department heads and purchasing department heads of the respective universities were participated in this study. Close ended questionnaires which were filled by internal auditors, interview and document review were the sources of data for this study. The findings of the study highlight that internal audit effectiveness is strongly influenced by internal audit work quality; management support and internal audit staff quality; whereas organizational independence has not a strong impact on audit effectiveness.

Key Words: Internal audit, effectiveness of internal audit, Public Universities in Ethiopia

FBEA 5: Patient Satisfaction and Associated Factors In Private And Public Health Institutions In Gondar Town, Northwest Ethiopia

Tewodros Tarekegn*

Plan, Budget and Income Generation Process, +251918774644, UoG, Gondar, Ethiopia

ABSTRACT
Introduction-Patient satisfaction is considered as one of the desired outcomes of health care and it is directly related with utilization of health services. Asking patients what they think about the care and treatment they have received is an important step towards improving the quality of care, and to ensuring that local health services are meeting patients' want. Various studies have reported that satisfied patients are more likely to utilize health services, comply with medical treatment and health care provider.
Objectives- To assess patient satisfaction and associated factors with service provided in private and public health institutions in Gondar town.

Methods- A cross-sectional survey was conducted in private and public health institutions in Gondar town on May 2011. Variables used in the study were grouped and summarized into three components, namely providers' characteristics, services characteristics and cleanliness of the health facilities. Each variable was scored on a 5 point Likert scale, ranging from 1 (very dissatisfied) to 5 (very satisfied). The mean score 3.22 is considered as a cut-off point and scores equal and above 3.22 are taken as an indicator of users' perceived satisfaction. Both bivariate and multivariate methods of data analyses were used.

Results- In this study, total of 1960 outpatients were interviewed at exit from health institutions. About 53.5 % of the interviewees said that they were satisfied in the study area. Satisfaction level in government health institutions were 26.7% but in private health institution were 80.2%, which means 1.54 times more likely to have high satisfaction (mean score (>3.22) on health care providers’ characteristics) than government health institution[AOR: 1.54, 95%CI= [1.15-2.05]]. Whereas to level of health institutions, 50.4% of the respondents were satisfied in government Hospital, 91.0% were satisfied in private Hospital, 4.0% were satisfied in Health center and 94% and 60% were satisfied in private higher clinics and medium clinics respectively.

Conclusion- The satisfaction level of outpatient service users in the study area was low. There should be an improvement in services delivery given for clients especially in public health institutions. Furthermore, periodic assessment of health services and further study, especially from the user's satisfaction perspective is recommended as a fundamental initiative in the improvement of the performance of health facilities.

Keywords- private providers, public providers, satisfaction, Gondar, Ethiopia

**FBEA 6: Innovation management for sustaining strategic advantage**

Addisu Mehari*, Gashaw Tibebe, Fentaye Kassa
*Department of Management, Faculty of Business and Economics, mehariaddisu@gmail.com, +251918776023, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

**BACKGROUND:** Postindustrial organizations today are knowledge based organizations and their success and survival depend on creativity, innovation, discovery and inventiveness. Innovation is often associated with change. Innovation is regarded as something new, which leads to change. Innovation is engine of change and in today’s fiercely competitive environment resisting change is dangerous. Companies cannot protect themselves regardless of their current excellence or the vastness of their organization and their current resources. The key driver of the organization’s ability to
change is innovation. The concept of innovation has evolved significantly over the last fifty years. Innovation does not always mean employing the very latest cutting-edge technology. On the contrary, it is less a question technology and more a way of thinking and finding creative solution within the organization. Innovation management has conspicuous impact for sustaining strategic advantage of the organization. This can be interspersed in terms of competitive advantage and long term and strong competitive influence.

Objective: 10.1. The general objective of the study is to provide a comprehensive review of the scope, trends and major actors in the development and use of methods to manage innovation to sustain strategic advantage. The specific objectives of the study are: to increase organizational competitiveness, to bring integration and coordination to the notice of the different actors, to understand the strategic impact of innovation, to clarify knowledge as primary value added processes, to understand the role different actors in the innovation management, to promote innovation for users, to strengthen innovation management and to improve the know-how of actors promoting innovation management.

Methods: The study design was qualitative research as qualitative research offers means to capture a wide-angled view of the study with its subjective multiple truths. The aim of the qualitative research is not to provide generalizations, and it has been argued that validity and reliability are not relevant in qualitative research (Parsad, 2002). The very notion of generalization assumes that findings can be applied to other cases as well. However, as the aim of the qualitative research is to bring new knowledge through describing a phenomenon in terms of individual experiences, it would be impossible to find laws and regularities that can apply to all situations. Qualitative research assumes that phenomena are historically, contextually and culturally conditioned. It is on this assumption that the ontological and epistemological of this study was base. In addition, the study was based on an exhaustive literature research and an analysis of the opinion of a balanced (geographically and by nature of activity) cross-section of stakeholders in these fields (business, academic centers, business schools, consulting firms, business support organizations and government.)

Results: actors are doing their businesses in isolation of one another. In some instances knowledge is seen as an end in the academic institutions. The integration between actors are very low and some actors are grossly absent in the region.

Conclusion and recommendation: Actors are cognizant of the benefit of innovation for sustaining strategic advantage but the degree of commitment to work in an integrated manner is so week. Some actors like consultancies are grossly absent in the region. So, set up a scheme to promote innovation in the region, integrate the performance of each actor, show the strategic advantage of innovation for each actor are some of the recommendations.
FBEA 7: Transformational leadership and gender

Addisu Mehari*, Mulu Aderie and Fentaye Kassa

1Department of Management, Faculty of Business and Economics, mehariaddisu@gmail.com, +251918776023, University of Gondar, Gondar, Ethiopia

ABSTRACT

Background: There has been an explosion of interest in leadership in the current dynamic and complex work environment. Each day stories appear in the newspapers discussing instances of successful leadership, as well as significant failures of leadership. Historically the vast majority of the noted leaders have been men. This is particularly true for those labeled as charismatic-transformational-Gandhi, King, Mandela, Kennedy and even the notorious ones-Hitlor, Mussolini, Binladen, etc. Leadership is the topic that comes up in most discussion in our professional lives, yet this has been dealt with mainly using male role models from the past. Transformational leadership has rapidly become the approach of choice for much of the research and application of leadership theory. In many ways, transformational leadership captured the imaginations of scholars, practitioners and students of leadership. This is because transformational leadership is of interest in the current scenario. It is because transformational leadership with its emphasis on intrinsic motivation and a positive development of followers, presents a more appealing view of leadership compared to the seemingly “cold,” social exchange processes of transactional leadership. Transformational leadership provides a better fit for leading today’s complex work groups and organizations, where followers not only seek an inspirational leader to help guide them through an uncertain environment but where followers also want to be challenged and to feel empowered, if they are to be loyal and high performers. Who can play this crucial role (men or Women) will be the pivotal point of this study.

Objective: The general objective of the study is to uncover the definitive facts on the key ingredients of transformational leadership and to determine if gender plays a pivotal role in this regard. Specific objectives are: to open the door to both men and women the true essence of transformational leadership, to peel away the onion of bias that still found in the public sector regarding leadership and gender, to understand the components of transformational leadership, to understand whether biological sex has parental station for transformational leadership and to understand if there is differences in leadership behavior of male of female.

Methods and material Qualitative research design was used for the purpose of the study. Qualitative research emphasizes individual meanings, context and self-reflectivity. Using the qualitative approach design the researchers were understood participant’s experiences
within the context of the issue and it is most advantageous to achieve the purpose of the study. Within the quantitative approach, the researchers were incorporated narrative inquiry techniques. The three dimensions of the narrative inquiry included temporarily, personal and social, place. Moving within these dimensions enabled the researchers to travel in four directions: inward (internal condition), outward (environment), forward, and situated within place (past, present and future). Another important theme is that of relationship—those between the researchers and the participants as well as those between the researcher and the study. So the research design could be named as non-experimental as the researchers were trying to see the effects by tracing back the causes, and from time perspective the study could be regarded as retrospectives design as the study will focus on past trends and study it into the future.

Results: As the essence of this paper purports, the researcher find there is virtually no difference of leader emergence attributed to biological sex. Women are underrepresented in top positions of the public sector in the region. The reasons are of two folds: external (culture) and internal (females are not inhabited in acknowledging their own leadership potential). This is but to mention few.

Conclusion and recommendation: There is no correlation between transformational leadership and gender and females should aggressively assess the policy impact which is designed to balance the imbalance of leadership positions.

FBEA 8: Assessing the Ethical Issues in HRM practices at Public Organizations: The role of HR Practitioners under the federal civil service of Ethiopia

Fentaye Kassa Hailu*

Department of Marketing, Faculty of Business and Economics, P.O.Box 196, University of Gondar, Gondar, Ethiopia

ABSTRACT

A code of ethics is one of the most important components of any occupation and professional. It is a set of guidelines for conducting oneself in performing and discharging his or her duties and responsibilities according to such professional competency standards. This is to promote and maintain reputation, trust, integrity and honor of those in such professions. Ethics in human resource management are the policies and values that serve as operational guidelines for the management of people at work. Managing human resources often requires ethical decision making in which fairness plays a role. The purpose of this study was to examine ethical issues in HRM practices in the Federal civil service of Ethiopia and the roles of Human resource practitioners in promoting ethical practices with a view to achieving employee well-being and satisfaction at work as well as organizational performance. In this study Qualitative research method was employed. Document review was applied as a method of data...
collection in this qualitative research. Data analysis in this study was based on content analysis and Data analysis and collection were performed simultaneously. As a result of this study a code of ethics for Human resource practitioners in public sector under the Federal Civil Service of Ethiopia was developed. The code of ethics was comprising of: Treating others with integrity, legality and nondiscrimination; Reliable proficiency and continuous learning in HR professionals; Upholding Confidentiality and information sharing; Stably being role models in the Human resource ethics code; Thoughtfulness in handling conflict of interests in Human resource management; and Ensuring Political neutrality. Approaches were suggested for the implementation of code of ethics: awareness; commitment; and engagement mechanisms.

**Keywords:** Civil service, Code of ethics, Human resource practitioner
PART III: FACULTY OF NATURAL AND COMPUTATIONAL SCIENCES

**FNCSA 1: Habitat preferences, seasonal variation and diets of rodents in Alage, southern Ethiopia**

Agerie Addisu¹ and Afework Bekele²

¹Department of Biology, University of Gondar, e-mail: aagerie@yahoo.com, Mobile: +251-911791783/912065499, PO Box 196, Gondar, Ethiopia,

**ABSTRACT**

**Introduction:** Globally, small mammals form a major proportion of the mammalian fauna. Among them, rodents comprise 42% and represent the largest order with over 2000 species. In Ethiopia, about 84 species of rodents have been recorded and from these, 11 species of rodents have been identified as pests. However, studies on habitat preferences, seasonal variation and diets of the rodent community are still poorly known for many parts of Ethiopia. Therefore, countrywide studies on diets and habitat preferences of rodents in different habitats are important to understand relationships between species and between rodents and the environment.

**Objectives:** This research work at hand was conducted to carry out extended ecological surveys in Alagae and its environs to determine habitat and diet preferences, seasonal variation of rodents and to identify pest rodents that pose great impacts on agricultural products.

**Method:** To determine habitat preferences, seasonal variation and diets of rodents, permanent 70 x 70 (4,900 m²) live trapping four grids were established in different habitat types (shrubs and bushlands, *Acacia* woodland, maize and wheat farmlands). In each trapping grid and session 49 (7 x 7) Sherman live traps were set at 10m intervals for three consecutive days. A Capture-Mark-Recapture (CMR) method was employed by marking toe clipping and released at the point of capture. To explore the remaining habitats and for stomach content analysis, 20 snap traps at an interval of 20m were used at least 200m away from live trapping sites. The raw data were summarized and tested using descriptive and \( \chi^2 \) test was employed to evaluate the significant differences of different parameters.

**Result:** The 3312 trap nights, from four trapping habitats, yielded 776 individual rodents that represented in 11 species. The distribution of species varied from habitat to habitat and season to season. The abundance of rodents during wet season was 52.3% while in dry season 47.7%. No significant difference (P>0.05) encountered between abundance of species and season. The highest number of rodents was trapped from shrubs and bushland...
in wet and dry seasons with 137 and 211 individuals, respectively. However, the number of individuals was lowest in maize and wheat farm, with 57 and 10 individuals in wet and dry seasons, respectively. Analysis of stomach content of snap trapped rodents from different habitats showed differences in the diet composition of species and seasons. Six rodent species were recorded as pests on the farmlands in the area. **Conclusion:** In general, variation in habitat preferences and diet of rodents in different habitats and seasons showed key role of ground cover and food sources. **Key words:** habitat preferences, rodents, seasonal variation, diet. 

**FNCSA 2: Determination of some heavy metals in tap water of north Gondar zone (Chiliga, Alefa, Gondar town and Makisegnit) by anodic stripping voltammetry technique**

Atnafu Guadie*, Dessie Tibebe, Yezbie Kass

Department of chemistry, Faculty of natural and computational science, attaufiinguad@yahoo.com, +251918057121, P.O. Box 196, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

In this research, the direct determination of Cadmium, Copper, Zinc, and Lead of heavy metals in the tap water of selected Towns of North Gondar Zone (Chiliga, Alefa, Gondar Town and Makisegnit) were carried out by differential pulse anodic stripping Voltammetry (DPASV) technique at the glassy carbon electrode (GCE). The Zn (II), Cu (II), Pb(II),Cd(II) ions were recorded peak potentials at -1.05 V, -0.3V, -0.4V, -0.65 V on a bare glassy carbon surface respectively. The deposited metals were also oxidized by scanning the potential of the electrode surface from -1.5 to -0.8 V using a differential pulse mode. The parameters in the preconcentration steps studied included electrolyte influences, pH, concentrations, and volumes. Effective preconcentration of trace heavy metals were achieved at pH 4 and swept rate of 15 mV/s. The concentrations of these heavy metals in the tap water samples from selected sampling sites of Aykel, Shawra, Gondar Town and Makisegnit were found to be for 0.29, 0.23, 0.31, 0.47 µg L⁻¹ for Cd, 0.26, 0.28, 0.41 0.38 µg L⁻¹ for Cu, 0.2, 0.33, 0.42, 0.24 µg L⁻¹ for Pb and 0.70, 0.58, 0.80, 0.81 µg L⁻¹ for Zn respectively and the limit of detections were 0.05, 0.065, 0.036, 0.08 µg L⁻¹ for Cd, 0.06, 0.08, 0.07, 0.09 µg L⁻¹ for Cu, 0.02, 0.03, 0.052, 0.084 µg L⁻¹ for Pb and 0.070, 0.088, 0.090, 0.031 µg L⁻¹ for Zn.. All the results obtained from the research were lower than the drinking water contamination standard issued by the World Health Organization. Therefore, the tap water for selected Towns of North Gondar Zone seems to be safe for humans and biota.

**Key Words:** Anodic stripping Voltammetry (ASV); Glassy Carbon Electrode (GCE), Zinc, cadmium, Copper, Lead, Tap Water.
Late blight caused by *Phytophthora infestans*, is one of the most significant constraints to potato production in Ethiopia and other regions of the world. Use of fungicides together with host resistance under well managed irrigation field is the most efficient control options available to potato growers. Field trials were conducted in 2012 dry season (January-April) in irrigation field and rainy season (May-August) in Chilga woreda, North Western Ethiopia to evaluate cost effectiveness of fungicides application regimes and comparative level of late blight epidemiology on three potato varieties, one from local and others released from near- by Agriculture research center. A randomized complete block design with two fungicides of four application interval (7-day, 14-day, 21-day and control) and three potato varieties was established. Late blight infection was prevalent in both seasons, and a significant amount of disease was detected \((p<0.01)\).

Comparatively high late blight severity and incidence were recorded from rain fed potato field than irrigated field. Fungicide application on potato planted plots were considerably reduced late blight progress, with a corresponding increase in tuber yield. In irrigation field, disease incidences and severity were very low especially in Gera and CIP-395011.2 varieties. As a result application of Mancozeb at 21-day intervals was most economical.

While in rainy season 7-day interval application of Ridomil was best in controlling the disease although not economical due to its highest variable cost. Marginal rate of return and net benefits were significantly affected by fungicide type, application frequency and potato variety. Application of mancozeb resulted in significant economic gains compared to Ridomil due to its low variable cost. The least net benefits were obtained from 21-day interval spray of mancozeb on Gera variety.

Keywords: Potato, Late blight, Mancozeb, Ridomil, Severity, Tuber yield
**FNCSA 4: Antimicrobial activity of Thymus schimperi (Tosign) against standard and clinical isolates of human pathogenic bacteria**

Rahel Abera¹, Taye Mebratu¹, Workabebe Dessie¹, Awokech Getu¹, Birtukan Getnet¹, Abreham Bekele²

¹University of Gondar, Biotechnology department (students)

²University of Gondar, Biotechnology department (supervisor), rih.abera@yahoo.com, abr2015@yahoo.com

**ABSTRACT**

*Thymus schimperi*, locally known as Tosign (Amh.), is multipurpose endemic species of Ethiopia that has been used for various remedies as constituents of traditional medicine. The objective of present study is thus to evaluate antibacterial activity of water, ethanol, methanol and chloroform extracts of *Thymus schimperi* using agar well diffusion and broth dilution methods against seven human pathogenic bacterial strains. Chloroform extract possess the highest potential of inhibiting the growth of all bacteria under study at concentrations of 50 mg/ml while ethanol and methanol extracts fail to inhibit *Klebsilla pneumonia* (clinical isolate) and *Shigella flexneri* (ATCC 12022) at the same concentration. Water extract didn't show any zone of inhibition on all test bacteria as compared to other solvents. MIC and MBC were performed only for chloroform extracts that showed inhibition against all test bacteria. This study revealed that, the highest sensitivity with chloroform extract was exhibited against *MRSA* with mean zones of inhibition of 22.6 mm whilst the minimum inhibition zone was observed for *E. coli* (ATCC 25922) with mean zone of inhibition of 14.6 mm. The MIC value ranged from 6.25 to 12.5 mg/ml while the MBC value ranged from 6.25 mm to 25 mg/ml. This study clearly indicates that the crude chloroform extract of *Thymus schimperi* showed highest antibacterial activity against all studied bacterial strains as compared to the three solvents used in this study. Thus, further study and characterization of active compounds of this plant is required.

**Keywords:** Antimicrobial activity, MBC, MIC, *Thymus schimperi*, Tosign, Zone of inhibition
ABSTRACT

In the 21st century knowledge economy, the society is completely depending on knowledge as economic resources, as culture and as social values. Due to this, higher educational institutions are under increasing pressure to take advantage of cyber technologies for knowledge sharing. University of Gondar is one of the biggest higher education institutions in the country with knowledge sharing as its reason of being. However, knowledge creation and sharing practices of the University with the bases of the existing technological tools are not explored.

The present study, therefore, assesses the flow of tacit and explicit knowledge among students and teachers of the university using SECI model of knowledge creation and sharing. Four phase of the SECI model; namely, socialization, externalization, combination and internalization are used since it is very important to assess the flow of knowledge. Furthermore, the study also evaluated the support of existing information communication technology infrastructure of the university in knowledge sharing.

This study was used quantitative methodology. Hence, primary data are consulted to attain the research objectives. 124 Questionnaires were distributed randomly from 726 students of five purposively selected departments of University of Gondar. The questions in the questionnaires were framed to cover all phases of the SECI knowledge sharing model. In addition to that questions concerned with support of existing information communication technology of the University for Knowledge sharing were also included. Descriptive statistics of SPSS version 16.0 had been used for analyzing the collected data.

The study result shows that combination phase is with low average mean and standard deviation 2.96 and 1.12, respectively. On the other hand, socialization, externalization and internalization phases registered similar average standard deviation, 1.19; with 3.10, 3.06 and 3.04 average mean, respectively. Accordingly, knowledge socialization, externalization and internalization are relatively in good status. However, the University does not properly combined, edited and processed explicit knowledge. Besides, the existing ICT infrastructure of the university is not properly used to assist students to create, codify and share knowledge with their colleagues and instructors. As a result, the automated systems should be deployed so as to foster knowledge sharing throughout the university. Moreover, further research need to be conducted to develop knowledge sharing model for the University.
**FNCSA 6: Isolation and characterization of phosphate solubilizing bacteria from Acacia abyssinica tree root soil**

Getaw Abera, Agerie Yisma, Bitweded Molla, Niku Gebre, Tigist Adugna, Musin Kelel*

*University of Gondar, Faculty of Natural and Computational Sciences, Department of Biotechnology

**ABSTRACT**

Phosphorous is an essential plant nutrient whose deficiency severely restricts crop yield and it is the least available to plants. Phosphorus solubilizing bacteria play role in phosphorus nutrition by enhancing its availability to plants through release from inorganic and organic soil P pools. Hence, in this project isolation and characterization of phosphate solubilizing bacteria (PSB) was done to screen Potential PSB colonies from Acacia abyssinica plant root soil on Pikovskaya agar medium with 0.5% tri calcium phosphate (TCA) using dilution and plating method. Screened colonies were exposed to temperature of 37°C, 47°C and 57°C and cultured in broth medium with pH ranges from 4 to 9 to determine optimum pH. To find out effect of heavy metal PSB colonies were incubated for 24 hrs at different concentrations (0-0.12 ml g/ml) of HgCl (II). Attempts were also made to recover bacterial colonies from the test tube cultures after 24 hrs on agar medium for each concentration of mercuric II chloride. In this work PSB colonies isolated from Acacia abyssinica tree root soil were observed with high halo zone after 24 hrs on Pikovskaya agar medium containing TCA. These colonies were able to grow at a temperature of 47°C and over a pH range of 4.5 to 8.5. Again, these colonies were found to resist concentration of mercuric chloride up to 0.02 microgram/ml. Therefore, for better understanding of PSB isolated from Acacia abyssinica tree root soil further characterization of the colonies and studies for application in agriculture is required.

Key words: phosphate solubizing, bacteria, Acacia abyssinica
The concentration of nine essential metals (Ca, Mg, Fe, Mn, Zn, Cu, Co, Cr, Ni) and two nonessential and toxic metals (Cd, Pb) were determined in Tilapia (Oreochromis niloticus), Nile Perch (Lates niloticus), and Bagrus (Bagrus docmac) fish species collected from Lake Abaya, Ethiopia. The samples were determined by using flame atomic absorption spectroscopy (FAAS). An optimized digestion procedure was selected based upon less reagent consumption and shorter digestion time. The optimized procedure used 6 ml of HNO$_3$ (69-72 %), 3 ml of HClO$_4$ (70 %) and 1 ml of H$_2$O$_2$ (30 %) with initial temperature of 150°C and final temperature of 300°C for 3:30 hrs total time by a Kjeldahl apparatus hot plate digester. The validity of the optimized procedure was evaluated by the analysis of spiked samples whose recovery was in the range 92.91-109.33% in the fish species. The mean concentration range of each metal in the samples was: Ca 4738.89 – 4822.22 µg/g; Mg 3800 – 3966.67 µg/g; Fe 87.44 –115.61 µg/g; Mn 4.56 –5 µg/g; Zn 14.02 – 17.41 µg/g; Cu 3 –11.28 µg/g; Co 10.11 – 11.11 µg/g; Cr 6.28 –6.61 µg/g; Ni 8.83 –10.50 µg/g; Cd 0.37 – 0.44 µg/g. In this study, Lead was not detected in all the three fish sample species. The concentrations of Ca and Mg were higher than the other metals in the three samples and Cd was in the least amount of all the metals in the analyzed samples. The abundance of Ca and Mg in the fish samples is typical of the basaltic parent rock formation of the area in Lake Abaya. Only the manganese level in muscles of all fish samples was higher than the acceptable values for human consumption designated by the FAO, 1983. Hence, based on this result the samples are safe for human consumption but further analysis by instrument such as ICP-MS, should be compared. Even though, there are no high levels of heavy metals in fish samples, a possible hazard may occur in the future depending on the extent of agricultural and fishing development in this area.

**Key Words:** Heavy metals, Fish Species, Lake Abaya, Kjeldahl apparatus, FAAS
**FNCSA 8: Extraction of Lectin from banana and evaluating its effect on GP-160 of HIV-1**

Flagot Mola1, Fatuma Abiyu1, Menen Zenebel1, Nuhamien Aregal1, Baharu Assefai1, Jira Hirpal1, Nega Berhan1

1. Department of Biotechnology University of Gondar, Gondar, Ethiopia

**ABSTRACT**

Banana Lectin (Banlec) is a lectin from jacaline related lectin family isolated from a fruit Banana Musa acuminate. It exists as a homodimer which are two identical 15Kda (kilodalton) sub units. The protein is highly stable and bind to certain carbohydrates structure including those found on virus containing Glycosylated envelop protein and is a potent inhibitor of HIV-1 GP (Glyco protein) 160 which is the outer cover of the Human Immuno Deficiency virus (HIV). The objective of this study was to isolate and extract lectin from banana and to scrutinize its inhibitory effect on GP-160 of HIV-1 virus. Lectin was extracted and isolated from over ripped banana soaking it with acetic acid (CH3COOH) overnight under 20C and it was homogenized and kept in the same temperature for 24 hours. The pellet was then separated from the supernatant. Nickel affinity chromatography was applied to separate supernatant and separate lectin. The effect of extracted lectin protein to inhibit HIV-1 GP160 was tested by the KHp kit containing coated GP-160. The extract showed binding effect on GP-160 protein obtained from the kit. Therefore, it could be assumed that the presence of high banana lectin in the body may protect the entrance of the virus to the CD4 cells. Further invivo and invitero tests are required to confirm this result.

**Key words:**- Lectin; GP160; KHp kit; Glycosylated

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**FNCSA 9: Synthesis of Ti0.8Mn0.2 O2 Nanomaterial for Pt catalyst Support and its Unique Promotional Effect for Improved Activity, Stability and CO Tolerance in MOR**

Nibret Gebeyehu Akalework, Chun-Jern Pan and Bing-Joe Hwang,

*aDepartment of Industrial chemistry, Bahir Dar University, Bahir Dar, Ethiopia*

*bNanoElectrochemistry Laboratory, Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 106, Taiwan*

*cNational Synchrotron Radiation Research Center, Hsinchu, 30076, Taiwan*

*Corresponding Author. Fax: +886-2-27376644, E-mail: bjh@mail.ntust.edu.tw*

*bCurrent address: National Taiwan University of Science and Technology, Taipei 106, Taiwan*

**ABSTRACT**

Oxidation of methanol over Pt supported on Mn doped TiO2 (anatase) nanomaterials with nanosheet and nano-road like morphology was investigated. An optimized Mn
doping level into TiO2 structure has been explored, characterized and the formation mechanism of these intriguing nanocomposites is proposed. It is demonstrated that Pt supported on a Mn doped TiO2 support revealed a promising unique CO tolerance electrocatalysts for methanol oxidation reaction (MOR) compared to Pt/TiO2 and Pt/C (JM 20). In the CO stripping measurement, Pt/Ti0.8Mn0.2O2 displayed multiple absorption peaks exhibiting its unique nature for a CO tolerant electrocatalyst for methanol oxidation reaction. The high stability, activity and unique Pt/Ti0.8Mn0.2O2 nanomaterial towards MOR is ascribed to the improved electron and proton conductivity, strong metal support interaction as well as to the promotional effect played by Ti0.8Mn0.2O2 resulting a ‘bifunctional’ mechanism for MOR. Our approach can also be extended to other technological areas: CO gas phase oxidation reactions, green water splitting and lithium ion batteries.

**Key Words:** MOR, Nanomaterial, Ti0.8Mn0.2O2, Promotional effect, CO oxidation
FSSHA 2: Identifying and Promoting Visual Arts of the Gondarian Period for Sustainable Development

Bantalem Tadesse*, Ebrahim Damtew, Teshager Habtie
*Assistant Professor, Department of History and Heritage Management, FSSH, University of Gondar, Ethiopia

ABSTRACT

The shift of the political centre of the Christian kingdom from Shawa to the Lake Tana area in the late sixteenth century set up a fertile ground for the expansion of Christianity and cultural developments in the area. Founded in 1636 by Emperor Fasiladas (1632-1667), Gondar served as a capital of Ethiopia until 1855. The town retains still an atmosphere of unique charm mingled with an aura of mystery, and once was called ‘Africa’s Camelot’. The foundation of Gondar is regarded as opening of a new period in the history of the country. Buildings of castles, churches, bridges and visual art are most known achievements of Gondar in material culture.

Art allows to see what is otherwise hidden from the sight. Conceptual art even shows the relation between the invisible and visible. The development of diversified styles and principles of visual art during this period led to the development of unique visual art, known as Gondarine art. However, the themes and unique elements of most of these visual treasures in Gondar and in the surrounding are not identified and promoted for sustainable development. In addition, these days, many of these paintings lost their values due to external elements and poor conservation system. Thus, the main objective of this study aims at identifying and promoting these visual treasures. The study is conducted based on literature reviews, interviewing important informants and direct observations.

FSSHA 3: Cultural Heritage management and Sustainable Development in East and West Belesa Woredas, North Gondar Administrative Zone

Bantalem Tadesse, Ebrahim Damtaw, Ashenafi Alemu, Teshager Habtie

ABSTRACT

Different concerned institutions defined heritage tourism in different ways. While politically oriented definitions tend to be inclusive as possible to show the level of consumer interest, marketing oriented definitions strive for greater allocation of marketing resources to the sector. For instance, a travel of tourists to learn about others and their way of life, to see other people in their authentic environment and to view the physical manifestations of their life as expressed in arts and crafts, music, literature, dance, food and drink, play, handicrafts, language and rituals, is defined as cultural tourism.
This study attempts to identify the cultural resources of the study area and to examine the mutual relation of cultural heritage management and sustainable development in the area. Thus, the main objectives of the study are identifying the material and immaterial cultural resources of the study area; investigating the values of promoting the heritage resources for sustainable development; examining the integration of cultural heritage management and sustainable development promotion practices in the area. Regarding the research methods, as the nature of the research requires it is conducted in library research and field works.

FSSHA 4: Heritage Management and Sustainable Tourism Development in selected Woredas in South Gondar Administrative Zones with Special Emphasis to Hot Springs

Bantalem Tadesse*, Teshager Habtie Engdu G/wold, Yeshambel Mulat, Ebrahim Damtaw
*Assistant Professor, Department of History and Heritage Management, FSSH, University of Gondar

ABSTRACT

Replete with immense cultural and natural assets to bloom sustainable economy through tourism, South Gondar Administrative Zone is one of the richest areas in Amhara Regional State. To mention only few examples, the attraction sites in the study area include hot springs, ancient caves and ancient and medieval churches and monasteries. Hot springs have dual purposes: recreation and healing purposes.

However, most of these attractions are not identified and promoted for sustainable development. Even though few are visited occasionally, their promotion became source of debate and discourse over promotion versus commodifications with in the local communities. This in turn hindered their contributions for the economic and socio cultural developments of the local community.

The main objectives of this study aspire therefore to identify the hot springs in the study area; to examine the heritage management and sustainable tourism development practices; and to investigate the arguments on tourism promotion versus heritage commodification in the study area. It is conducted on qualitative method. This will be addressed based on secondary and primary sources in pre field library research and personal observations and interviewing important informants in individual and in group during the field works.
FSSHA 5: A Historical Survey of religious tolerance, co-existence and indigenous values in North Gondar Zone: Evidences from Chilga, Metema and Gondar Town
Ebrahim Damtew
Faculty of Social Science and humanities, ebrahimdamtew@yahoo.com, P.O.Box:196, 0911566518, University of Gondar

ABSTRACT
Indigenous cultural values in Ethiopia have built deeply rooted religious culture of co-existence. The study is about the evolution of indigenous Islam and Christianity in the study area and its derivatives. The research deals with issues of syncretism other than religions in their ‘pure’ sense but also the local historical conditions within which indigenous values have achieved harmony, tolerance and co-existence that brought cohesion and unity.

The objective of the study is to revisit and pronounce the inter-marriage of cultural values and world religions which gave birth a new identity that proved the source of belongingness and family hood. Besides it is the objective of the study to call for preservation for generation to come as an identity marker.

It was from Primary and secondary sources of information that the researcher collected valuable evidences / data / to substantiate this paper. Up on the bases of the data collected it is possible to argue that the dynamics between indigenous culture and world religions gave rise for the tolerant Islam and Christianity.

In the study area, Muslims and Christians have maintained their cultural bond of co-existence for several centuries. Saint venerations baptism of holy water, holy men commemoration, magical practices, exorcising ‘evil’s spirit possession, honoring the dead, praying at the ‘sacred Tree’ are components of the values of the believers. Thus, inter communal relation has been the cornerstone of co-existence than issues of religious differences and similarities.

Keywords: religious tolerance, Christianity, Islam, cultural values, syncretism, spirit possession.

Yeshambel Mulat*

*Department of History, Faculty of Social Science and Humanities, 0913285456, yeshambelmulat@yahoo.com, P.O.Box 196, University of Gondar, Gondar, Ethiopia

ABSTRACT

The age old sacred groves are one of the first instances of indigenous environmental management in general or trees in particular in many communities of the world. Ethiopia is not exceptional having many ethnic groups have diverse cultural and heritage management practices. The case of Qemant community is not exceptional. This study is about the role of indigenous knowledge for trees management practices among the Qemant community Chilga woreda, North Gondar zone, Ethiopia. In the woreda (district), the community practices indigenous cultural trees management practices since time immemorial.

The research deals with cultural beliefs (locally Hegelebona), values, ethics and taboos of indigenous cultures in trees management practices at Chilga woreda. Accordingly, local religion, ecological knowledge, medicinal value and benefits of the trees considered as units of analysis for the study.

Both primary and secondary methods of data collection tools employed to gather information in the study area. Data collection tools such as focus group discussions, observations; interviews documents both published and unpublished used and reviewed.

The major findings of the research indicated that indigenous cultural practices of the community have important roles in forest management practices in general and trees in particular and considered as heritage management issue. The community knowledge reflected in indigenous religion, ecological and medical knowledges and somehow the benefits associated with it.

In this regard it is good to state that If anyone sees a patch of indigenous age old trees in the Qemant inhabited areas, it is likely to be Degenna (ritual sites) where by Hegelebona is practicing. It is believed that sacred trees in the area dated back to several thousands of years when Qemant society was in primitive state and strictly forbidden to use such trees for different purpose.

Yet, the major of the community knowledges have limitations on their effectiveness, functions and implementations because of the change of religion to new once, thus, decline importance showed. This called for a new strategy to transform indigenous cultural practices by creating synthesis with scientific knowledge and their application on
forest management and trees in particular. As recommended, this will be done by the collaborative effort of the local communities and the government. This needs actually urgent solution. Therefore, it will open up the possibilities integrated knowledge between the government and the community for forest management practices and trees in the study sites.

Key words: Cultural values (beliefs and taboos), Indigenous, ecology, sustainable development, cultural diversity, environment, trees, management, Chilga Woreda(district).

FSSHA 7: The Role of Ethiopian Orthodox Church in Forest Management Practices among Some Selected Churches of North Gondar Zone

Yeshambel Mulat*

*Department of History, Faculty of Social Science and Humanities, 0913285456, yeshambelmulat@yahoo.com, P.O.Box 196, University of Gondar, Gondar, Ethiopia

ABSTRACT

This study is about the role of Ethiopian Orthodox Church in forest management practices among some selected churches of North Gondar zone. In this zone, the church practices environmental management since time immemorial.

The study dealt with the Ethiopian Orthodox Church role in forest management practices. The forest management practices attached with values and beliefs of the church. This is particularly true with the church thought of its mass followers on the issue of environment management. The followers of the church also abided by the church rule and regulations. The forest of the church is providing different services for church itself. Accordingly, all the above mentioned issues considered as units of analysis for the study.

The main objective of the study is to investigate and reveal the forest management practices of the E.O.C on some selected churches of North Gondar zone and to propose ways for maintaining useful forest management knowledge for sustainable development. Both primary and secondary methods of data collections tools employed to gather information in the study area. Data collection tools such as focus group discussions, observations, documents both published and unpublished employed and reviewed respectively.

The major findings of the research indicated that the Ethiopian Orthodox Church practices of environmental have important roles in forest management. The churches have deeper values, practices and perceptions under different psalms of bible quotation. Infact some of the community and the government practices have adverse affect on the management practices of the church. This is dully attached with the call of vilgazation program of the government and the community response of settlement under different regimes. Bible citations of the church has highly internalized by the believers. This was further strengthened by the community responsibility managing the forest through the
justification of every inside the church was considered as sacred. This called for a new strategy of transforming and called for massive based movement of the community using this knowledge as important insights for the development program imposed top to bottom. Thus, this called for also a new strategy where by indigenous can be transformed for best use.

Key words: Ethiopian Orthodox church, believers. Perceptions, values, bible, priests

**FSSHA 8: An Asset-Based Community Development Practice in Ethiopia:**

**The Case of Awura Amba Community**

*Semalegne Kendie Mengesha*

*Department of social work, Faculty of Social Science and Humanities,*

*semalegne2000@gmail.com, University of Gondar, Ethiopia*

**ABSTRACT**

In Ethiopia, community development in general and Asset-Based Community Development (ABCD) in particular have not yet been a well-addressed issue. None of the existing handful research reports have addressed ABCD practices in the country with a primary intention to the overall assets and capacities of indigenous communities like Awura Amba (AA). Therefore, this research intends to explore the nature and application of an ABCD approach in AA community emphasizing on asset and need mapping, practicability of principles of ABCD (including shared meaning, potentials of associations (social capitals), community-led development (inside-out development), power distribution (full participation), and civil engagement), uniqueness of AA's ABCD, and emergent challenges of AA community development efforts. A qualitative research approach, specifically a narrative analysis method has been designed to analyze thematically the data gained from such methods as in-depth-interview and Focused Group Discussions (FGD), and non-participatory observation with the help of Atlas ti version 6. The results of the research show that AA has been practicing ABCD principles in its purest form with the implementation of a cooperative-based approach to community development (CD). This makes the community unique in practicing CD in the country. Its CD practice is led by members of the community themselves because of developing shared meaning on different development intentions and efforts which is demonstrated by the full participation and civil engagement of members of the community that signified by the higher commitments members so exert to realize the mission and vision of the community. Stigma and discrimination, shortage of farming land, capacity limitation to spread out their CD approach to other communities in the world and life philosophy, and health problems due to the use of dangerous mechanical weaving machine. Generally, AA community is a good model for ABCD practice in poor communities of Ethiopia. Policy and practice implications are discussed.

**Key words:** asset-based, social capital, community development, Awura Amba
FSSHA 9: Modes Operandi, Modes Vivndi, and Consequences of Cultural Globalization

Semalegne Kendie Mengesha*

*Department of social work, Faculty of Social Science and Humanities, semalegne2000@gmail.com, University of Gondar, Ethiopia

ABSTRACT

Globalization is an international issue which has been on the carpet since the 1990s with various dimensions - political, social, economic and cultural. The main body of this paper is all about the cultural realm of globalization - cultural globalization - which is as an ever-increasing cross-border flow of cultures and technologies. The research intends to explore the beneficiaries, modes operandi and modes vivandi, and the outcomes of cultural globalization. These aspects of cultural globalization have been addressed through the application of a documentary research method. The findings of the research showed that cultural globalization it subtly run by western ethnocentric nations for their own benefits with several disguising efforts which in turn leads people of poor nations disadvantageous. I suggest that even though it is inevitable to stay within the roundabout of cultural globalization, since we have already been in it, there are some possible ways of minimizing the harmful aspects of cultural globalization for poor nations, like Ethiopia.

Key terms: globalization, cultural globalization, westernization, modernization

FSSHA 10: Magnitude and Determinants of Physical Child Neglect in Dembiya Woreda, Ethiopia

Semalegne Kendie Mengesha*

*Department of social work, Faculty of Social Science and Humanities, semalegne2000@gmail.com, University of Gondar, Ethiopia

ABSTRACT

In Ethiopia, the issue of child neglect has in fact been neglected by child maltreatment research undertakings. There are no empirical investigations reported in the country with a special attention to child neglect and its components (physical, educational and emotional neglects) separating from other types of child maltreatment, such as child abuse. Hence, this research intends to reveal the extent of Physical Child Neglect (PCN) and its determinant factors in Dembiya Woreda. Depending on the post-positivist knowledge base, the researcher gathered data from 381 randomly selected sample households through the application of interviewer-administered structured questionnaire designed for this purpose. The data were analyzed using a Binary Logistic Regression (BLR) model and produced the findings which revealed that the actual PCN is 73% while the potential is 91.6% of households dwelling in the Woreda. Among the multitude
determinant factors presumed to influence PCN and entered the BLR model, poor knowledge about child development (p = .003) and the use of corporal punishment as child discipline (p = .008) are found directly related to PCN while positive attitude towards children (p = .002) and emotionally non-neglecting behavior of households (p = .000) are found inversely related to the PCN. Policy and practice implications as well as further research areas are discussed.

Key words: child neglect, physical child neglect, child maltreatment, binary logistic regression, Dembiya

FSSHA 11: Multiple Determinants of Preparatory Students' Academic Achievement in Northern Gondar, Ethiopia
Semalegne Kendie Mengesha*
*Department of social work, Faculty of Social Science and Humanities, semalegne2000@gmail.com, University of Gondar, Ethiopia

ABSTRACT
In Ethiopian, multiple factors influencing academic achievement of preparatory school students have not yet been systematically investigated with a particular attention to preparatory schools in Northern Gondar Administrative Zone. Hence, this research aims at examining the relationship between preparatory students' academic achievement and the multiple factors (student, family and school level factors). The researcher designed a sample survey consists of 377 randomly selected students from three preparatory schools of the zone from which data were gathered through the application of self-administered structured questionnaire. A Multiple Regression (MR) model was applied to analyze the data assisted by the Predictive Analysis Software (PASW) version 18.0. Results show that student-related factors (respondents' prior achievement (p=.000), average study time per day (p=000), male sex (p=.000), age (p=.018) and Internet utilization hour per week (p=006)) are the most important ones in determining academic achievement followed by school-related factors (like school library utilization hours per week (p=.002), number of students in a class (p=.049), and good friendship relationships (p=.025)). Out of those parent-related factors only higher parents' expectation (p=.009) is significant. As to the result of the investigation, age, study time, prior academic achievement, and library utilization time are found positively significant while other are inversely related to current academic achievement of students. Generally, there research suggests that it will be important to deal with student and school level factors whenever we take actions and formulate programmes targeting to addressing students' academic achievement at preparatory school. Some policy and practice implications are addressed.

Key words: academic achievement, multiple determinants, multiple regressions
ABSTRACT

Introduction: Awra Amba is a small community living in the Southern Gonder, at a distance of 73 kilometers from the city of Bahir Dar. The Awra Amba community is attracting not less than 5000 local and international tourists as of 2011/12 statistics from the community leaders. Objectives: In view of the above, the current study attempts to have a look at the Socio-cultural Sustainability of the community. Specifically the study attempts to evaluate the level of sustainability, and identify the hindrances that hold back the economic and cultural state of affairs from spinning out in spatial and temporal facets. Methods: To achieve this, the researchers made use of focused group discussions, interviews, and structured observations by adopting Sustainability Checklist available from the literature. Findings and Conclusions: Based on the findings of this study, it can be concluded that the socio-cultural sustainability of the community is at stake. The current option at hand is the growing number of tourists, both national and international, which can be taken as an option to diversify means of earning for the community. Thus, to help the community sustain all along, interventions should be done by social welfare organizations, the regional government and academic institutions nearby. Awareness raising and skills development trainings shall also be prepared for the community in this regard.

Key Words: Sustainability, Awra Amba, formative, praxis
PART V: FACULTY OF AGRICULTURE

FoAA 1: Scaling Up: Extension strategies for household vegetable production for improved nutrition and food security in the Amhara Regional National State of Ethiopia

Andrew J. Carlson*, Capital University; Robert Agunga, The Ohio State University; Amsalu Feleke, University of Gondar; Yenus Ousman, University of Gondar

*Andrew J. Carlson, Ph.D., Department of History, School of Humanities, Capital University, Columbus, OH USA 43209. Email: acarlson@capital.edu or ajacarlson@gmail.com. Cell phone: 251-0910-179397

ABSTRACT

Background: Over the last six years the University of Gondar and the Kossoye Development Program have, on a small scale, effectively promoted household vegetable production in four kebeles in Wogera, Tikel Dingay and Dabat districts as a way of improving family nutrition and food security. Vegetables are a high source of Vitamin A particularly for mothers and children. Demand for vegetable production by households or families and communities have more than doubled since its introduction six years ago.

Objective: Micro-nutrient deficiencies and malnutrition are serious problems in the Amhara National Regional State. The challenge now is how to promote vegetable production throughout the region as a way of arresting nutritional and food security concerns in the region, which has almost 24 million people.

Methods: To address this problem in the future, we believe that the answer lies in the Government and its relevant ministries taking three clear strategies. The first is securing external funding for a regional project aimed at improving household nutrition and food security through vegetable production. Second, extension workers in the region should be seconded to the University of Gondar to undertake university-based extension similar to the Land Grant Extension System in the United States, which has made America the breadbasket of the world. The University of Gondar has a partnership with the Ohio State University, USA, which is one of the leading Land Grant Colleges in the world. Lastly, experimenting with a University-based extension model offers great promise for improving extension effectiveness throughout the country, since tying extension to the university offers an opportunity for a constant upgrading of extension skills and appropriate technologies.

Results: Our paper focuses on conceptualizing and field-testing a people-centered extension strategy that encourages inter-sectoral collaboration in development
programming through individual, household and community gardening, which will act as a fulcrum for promoting integrated rural development; and enabling an engaged university that makes its impact felt in neighboring communities and ultimately throughout the nation and beyond.

**Conclusion:** Our experience over the last six years suggests that household vegetable production can significantly improve nutrition and food security in rural areas. We believe that development of a robust extension service connected to the university will produce similar advances in other communities and the region as a whole.

**FoAA 2: Yield Evaluation of Garlic (Allium sativum L.) Varieties under Irrigation at Dabat, Northwest Ethiopia**

1° Asrat Ayalew, 1° Daniel Tadesse, 1° Solomon Fantaw and 1° Zenebe G/Medhin
1° Faculty of Agriculture, P.O.Box 196, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

Garlic is produced in Ethiopia mainly as a spice crop for seasoning of foods due to its strongest pungency and for its medicinal values. Nowadays, it is becoming an important cash crop for the country in terms of foreign currency exchange. It is being exported to Europe, Middle East and North America. Though it is a high valued crop, its production, productivity and marketability is not exploited to the potential we have due to lack of improved and adaptable varieties, improved agronomic practices, improved post harvest technologies and prevalence of some diseases. Dabat woreda has a great potential for garlic production. However, as else where in Ethiopia, annual production and productivity of garlic at Dabat is very low. There is no any improved variety under production in the woreda. Farmers use only the local varieties with their own traditional production practices. As a result the average yield of the crop is very low in this woreda; 6 t ha⁻¹. Even if the area is very suitable and the crop is very important commercially for the farmers for income generation, productivity is still unsatisfactory. Therefore, the main objective of this research work was to evaluate yield of garlic varieties under irrigation to select best adaptable variety(s). To achieve this objective, five garlic varieties were planted on Randomized Complete Block Design with three replications. Data on Bulb diameter (cm), Number of cloves /bulb, Bulb yield/plant (g), Bulb yield (t ha⁻¹), Bulb dry matter content (%) were collected and analyzed by SAS version 9.0 with general linear model procedure. Mean separation test was done by list significant test (LSD) at 5% P level. The analyzed result revealed that varieties were significantly affected garlic bulb yield, bulb weight, bulb diameter, clove number and bulb dry mater content. Significantly highest yield of 17.4 t ha⁻¹ was recorded from the local variety than those released varieties of garlic. Variety Kuriftu were significantly with the highest bulb diameter of 6.1 cm than the rest varieties. Significantly highest number of cloves was recorded from the local variety (21.00) followed by Kuriftu (17.43) than Tseday (13.93). The local variety and MM-98 were with the highest bulb dry matter content of 26.5 and 24.27%, respectively than Tseday (14.57%). Therefore, considering the bulb yield, it can be concluded that the local variety of garlic should be recommended to the producers. However, to give concrete recommendation this research should be repeated over locations and seasons.
FoAA 3: Participatory Farmer Evaluation of Maize Varieties (Zea mayz L.) In Chilga Woreda, Northwestern Ethiopia

Daniel Tadesse¹, Zenebe G/Gmedhin and Asrat Ayalew
Department of Plant Sciences, Faculty of Agriculture, University of Gondar,
P.O.Box 196, 0918781222, dniiltdss@yahoo.com
Gondar, Ethiopia

ABSTRACT
Maize is one of the world's three primary cereal crops. It is also one of the most important cereal crops in Ethiopia, and grows almost in all parts of the country. But varieties were evaluated and released by researchers without considering farmers preferences. However, this did not lead to the expected speed of variety release, or their dissemination afterwards. The objectives of the study were to evaluate improved varieties of maize by researchers, to identify farmers' cultivar selection criteria and to enable farmers to assess the performance of improved cultivars. The research was conducted at three farmer kebeles of Chilga woreda, north Gondar zone with five improved varieties of maize. Mother - baby trial model was adopted for the evaluation of these varieties in the rainy season of 2012. Observations which were recorded by the researchers include grain yield, total biomass yield, plant height, ear height, cob length, fresh cob yield, harvest index and number of seeds/row. Farmers evaluate the varieties by their own criteria. In researchers evaluation, almost similar result was obtained both in the mother and baby trials which shows significant variation among the varieties evaluated for the parameters recorded. BH-661 and BH-670 were outstanding in the mother and baby trial evaluation of the researchers respectively for the majority of parameters recorded. The criteria farmers used to evaluate the varieties were drought tolerant, yield, vigorously, husk cover, cob size, grain color and grain size. In farmers' evaluation, BH-540 stood first followed by BH-670, BH-660 and BH-661. When the researchers and farmers rank were compared, coincides were observed except for BH-540 which was ranked as 1st by farmers but last by researchers. From the criteria farmers set and use to evaluate the varieties, we understand that they give due attention not only to yield rather parameters like drought tolerant and early maturity which are prominent nowadays associated with climate change. This situation confirmed how farmers' cultivar requirements are much more diverse than yield per se however plant breeders may not know the traits that are important to farmers. We recommend that breeders should participate farmers in the early stages of varietal evaluation and their preferences criteria should be incorporated in order to ensure that appropriate technology is developed and promoted.

Key words: Maize, Mother and baby, Farmers' cultivar selection criteria, Participatory Varietal Selection
FoAA 4: Adoption and Sustainable Use of Conservation Agriculture: The Case of Dangila District, Awi Zone, Ethiopia

Ha'imanot Atinkur*

*Addis Ababa University, Ethiopia

ABSTRACT

Conservation agriculture (CA) is a set of practices, such as conservation tillage, soil cover and crop rotation, which increases productivity while conserving soil. Despite adoption of CA is a golden opportunity to reduce and recover aggravated soil erosion, nutrient depletion and maximize crop produce, its by farmers in Dangila district hindered because of many negative perception by farmers. This study, therefore, assessed factors that affect adoption decision behavior of CA and its implication on soil health and crop productivity in Dangila district, Awi zone, Ethiopia. The multistage sampling procedure was used to identify kebeles and sample respondents. Both qualitative and quantitative data were collected from sample respondents. While qualitative data were generated from observation, focus group discussions and key informant interviews using checklists, Quantitative information was collected from selected 120 sample respondents using structured interview schedules during survey time from December 2012 to January 2013. The structured questionnaire was pre-tested, refined, and administered by well-trained enumerators recruited from the study area. Descriptive statistics such as frequency, mean, standard deviation, t-test and $\chi^2$ were used to summarize the data while multinomial logit model were used to identify the most important factors that determine sample respondents adoption decision and sustainable use of CA practices. Among total sample respondents, 19.2% were adopters, 50% were partially-adopters and the rest were non-adopters of CA. Age, total land holding, and distance from resident to plot had significant mean difference between non-adopters and partially-adopters/adopters categories. Educational level of household head, participation in kebele or village administration, ownership of cultivated land and access to training were positively correlated to adoption of conservation agriculture. Results of from an econometrics (multinomial logit) model indicated that age of household head, educational status, distance from resident to the plot, soil fertility status, total tropical livestock unit and participation in kebele administration had significant influence on farmers’ adoption of CA practices. Generally, the results of this study indicated that adoption of CA is the cumulative of many factors, which should be given due attention in the innovation and transfer of agricultural technologies like conservation agriculture implementation on grass root level.

Keywords: Conservation agriculture, Adoption, multistage, Multinomial logit model, Dangila district
FoAA 5: Factors Affecting Adoption of Modern Beehives Technology: The Case Of North Gondar: Amhara Region, Ethiopia

Sisay Yehuala*, Degsaw Melak, Adugna Gelaw, Haimanot Atinkut, Kibrom Adino Malede Birhan

*Rural Development and Agricultural Extension, Faculty of Agriculture, University of Gondar, P.O. BOX – 930, sisaygon@yahoo.com, +251918778886, Gondar Ethiopia

ABSTRACT

In Ethiopia beekeeping development in the honeybee sub-sector plays an important role in increasing the livelihoods of farmers. The Amhara region bureau of agriculture and other development partners are exerting efforts to increase the income of farmers by introducing and promoting modern beehives technology to smallholder farmers of the region. However, it is observed that in the region the amounts of modern beehive technologies used by farmers are very limited and farmers that are provided with the technologies are not even properly using it. Thus, the study was sought to ascertain determinants of adoption of modern beehives technology and attitude of farmers towards the technology. A multi stage sampling method was employed to select three out of 24 Woredas of North Gondar zone, six PAs and 130 sample farm households using probability proportional to size. Structured questionnaire was developed and used to collect quantitative data for the study from the sampled farm households. Focus group discussion, group interview and field observation were held to generate qualitative data. Descriptive statistics and binary logit model were used for analyzing quantitative data. The results of the study indicates that 33 (25.6%) of the sampled farm households were adopters, whereas the remaining 96 (74.4%) were non-adopters. Farmer’s perception towards the technology was also assessed. 76.35% of the respondents didn’t have clear information about the technology. However, according to the opinions of the rest of the respondents it was identified that quality of the product, durability of the hive and suitability during harvesting of the product were the most important relative advantages of box hives. On the other hand, unavailability of the technology and unaffordable cost of the technology are also some of the relative disadvantages of the technology. According to the survey result of this study chemicals (pesticides and herbicides), pests and predators, lack of honey bee forage, migration, lack of honey bee colonies and absconding were identified to be the critical problems of beekeepers in their order of severity or importance as rated by farmers. Determinant factors that are affecting adoption of the technology were also analyzed by logit model and the result show that education, off-farm income, availability of credit, beekeeping training and perception in the price of box hives were important factors influencing adoption of modern beehives technology in the study area. Demographic variables like sex and age, farmer’s participation in PA administration, land holding size, participation of new technologies and labour availability were less powerful in explaining farmer’s adoption of modern
beehives technologies indicating that the two groups were homogeneous with regard to these variables. From the results of the study it was concluded that most of the technology adopters were literate that indicated special adult education programs must be promoted and expanded in rural areas as a precondition for technology adoption. On the other hand the majority of the non-adopters group were not accessed to formal credit. These conditions hindered farmers not to use box hives. Therefore, credit should be arranged as a part of the package for the proper adoption modern bee hives technology.

FoAA 6: Yield Performance Evaluation of Improved Potato (Solanum tuberosum L.) Varieties at Dabat, Northwest Ethiopia

*Solomon Fantaw, ¹Asrat Ayalew, ¹Daniel Tadesse, ¹Eshetu Agegnehu, ¹Zenebe G/Medhin, ²Amsalu Feleke and ²Amanuel Yitayew

¹ University of Gondar, Department of Plant Sciences, E-mail: fantaw solitude @ gmail.com, P.O.Box 196, Gondar Ethiopia

ABSTRACT

A field experiment was conducted at Dara kebele in Dabat District, North Gondar zone to investigate the Performance of different varieties of potato growth and yield quality, thereby, to recommend best adapting and high yielding variety (varieties) for the farmers in the study area. The study was conducted from June, 2012, to November, 2012, under rain fed condition using five improved varieties (Belete, Guasa, Jalane, Gera and Gudane) and one local as a control. The experiment was laid out in a randomized complete block design with three replications. The result of the study showed significant differences between varieties on days to emergence, days to flowering, days to maturity, plant height, number of stem per plant, weight of tuber per plant and total yield per ha. Accordingly, Jalane was early maturing variety (109 days) followed by Belete (114 days) and Jalane (115.67 days). Significantly highest tuber yield was recorded from Gera (26.25 t/ha) and Gudane (25.38t/ha) followed by Jalane (17.61t/ha) and Belete (16.64t/ha). The local variety gave significantly lower yield of 11.14t/ha. Therefore, from this result it can be concluded that the variety Gera and Gudane can be recommended to the study area. However, since this result is from one year data on one location, this research should be repeated at least at two locations to give concrete recommendation.

Key Words: Potato, Varieties, Belete, Guasa, Jalane, Gera, Gudane, Local

Tibebe Belete Tigabu¹,², Deepak, Khare¹

¹Department of Water Resources Development & Management, Indian Institute of Technology- Roorkee, Roorkee 247667, India;
²Department of Water Resources and Environmental Engineering, University of Gondar, P.O. Box 196, City, Gondar, Ethiopia; email: tibebghw@gmail.com

ABSTRACT.

This paper describes application of soil moisture water balance model and the physically based FAO Penman Montheith reference evapotranspiration estimation model in the evaluation of the water balance components (with particular reference to groundwater recharge) of Beresa catchment that found in South Eastern headwater of Upper Blue Nile. The total area covered in this study is 1112km². In typical mountainous catchments such as the Beresa in which surface water resources are scarce, groundwater is the primary resource for both domestic and agricultural water use. As availability of hydrogeological data is limited for groundwater balance analysis, important data like annual and monthly groundwater recharges were estimated after (Thomthwaite-Mather, 1955, 1957) methods. The hydrological study was conducted between 2012 and 2013. In this study, hydrological and hydrometrical data were analyzed and a soil moisture accounting method was used so as to account for the groundwater potential of the area. Evaluation of the annual water balance and conceptualization of stream flow shows that the average rechargeable rainfall (over a period of 31 years) in the study area is approximately 10.72%. On average 66.89% of the total rainfall in the area is lost as actual evapotranspiration and 22.39% contributed to direct runoff. The monthly water budget of the catchment indicates that the groundwater recharge is lumped from August to September. February is the month in which maximum moisture deficit is observed. July and April are the months that have neither moisture surplus nor soil moisture deficit. The months January, February, March, May, June, October, November and December are experiencing soil moisture deficit.
FoAA 8: Evaluation of Sorghum based Soybean Inter Cropping for Striga (S. hermonthica)

Management and Yielding Potential

Zenebe G/Medhin*, Daniel Tadesse, Eshetu Agegnehu, Solomon Fantaw
*Dep’t of Plant Sciences, Faculty of Agriculture, University of Gondar
P.O.Box: 196, gebremedhinzenenebe@yahoo.com, 0918 35 06 29, Gondar, Ethiopia

ABSTRACT

Background: Food situation has remained insecure and unpredictable in sub-Saharan Africa leading to high levels of cyclic famine and poverty. This has been exacerbated by perennial pest problems, which cause substantial pre- and post-harvest food grain losses. Production of cereal crops is threatened by Striga hermonthica weed. The production of cereals is menaced by the threat of low productivity as a result of the parasitic weed Striga hermonthica and other constraints. In the past, several control practices have been developed by research and have been recommended to farmers. Some of the control methods which differ with respect to their demand for land, labour, capital and management capabilities have been successfully applied by a few farmers.

Objective: To study the effect of intercropping system on sorghum with soybean for the ability of striga control and economic yield at Metema

Methods: The experiment was conducted on-farm at Metema, during 2004 – 2005 rainy seasons for two years. The station is located in North Gondar administrative zone, Amhara Regional State, Ethiopia representing the semi arid low land areas

Treatments:
- a) Sole Sorghum
- b) Intra-row intercropping (1:1)
  - e) Sole soybean
- c) Inter-row intercropping (1:1)
- d) Inter-row intercropping (1:2)

The experiment was established in a randomized complete block design (RCBD) in three replications at two locations. Plants were intercropped in varying proportions. The experiment consisted of an intercrop of one local variety of sorghum with one improved variety of soybean and sole sorghum and soybean, as control treatment. The collected data was analysed using SAS and mean separation for significant treatments was done with the help of LSD (Least significant difference test).

Results: The experiment shows a significant difference for yield of sorghum among the different inter-crop ratios. The ratio 1:2 (Sorghum: Soybean) shows the highest yield difference among treatments and lower striga count was recorded.

Conclusion: Based on the statistical analysis and frequent stand performance observations, the 1:2 (Sorghum: soybean) intercropping yields highest with low number of striga count. Therefore,
the lower striga count implies the ability of soybean to suppress the growth of the parasitic weed and favours sorghum growth. In conclusion the inclusion of legumes in inter cropping will have a good impact in suppressing parasitic weed apart from its contribution in improving the soil fertility by their ability to fix atmospheric nitrogen.

**Key words:** Intercropping - Sorghum - Soybean - Striga hermonthica

**FAA 9: Rural Water Supply and the Determinants of Productive Use of Water at Household Level: The Case of Metema Woreda, North Gondar, Ethiopia**

*Kibrom Adino*

*Faculty of Agriculture, University of Gondar, Gondar*

**ABSTRACT**

Water is the fundamental resource for survival, livelihood and Prosperity. In spite of its scarcity, water is everything to the rural households mainly of the poor in which water plays the role as direct inputs into production, as a basis for the health and welfare of the poor, and as prime input for rural households home based small-scale income generating activities. Despite these facts, in sub-Saharan Africa in general and particularly in Ethiopia in addition to the impact of climate change on water availability, other major factors such as population growth, non-sustainability of water supply projects and poor water governance growth are exacerbating water supply situation the country. Though rural water supply challenges remains intact in many of African countries, adequate water provision to the rural poor still considered as an avenue of rural livelihood improvement. As a result recently greater attention has been given to the broader livelihood benefits of rural water supply beyond the usual links between improved water and health. Having recognizing the multiple nature of rural water supply challenges and the contribution of rural water supply to home based economic activities, this study utilized the descriptive statistics and econometric models for assessing main the rural water supply challenges and the factors that determine productive use of water for home based economic activities respectively. To those effects the study assured that water is the prime input for home based productive uses in addition to the usual basic needs consumption. Yet the productive use of water in the study area found to be constrained by demographic and economic characteristics of the households and physical and environmental situation of the water supply of the area. Moreover, the study recognized that the water supply of the study area hindered by a combination of institutional, physical, and technical challenges. Hence in recognition to these the concerned bodies at all level should recognize the challenges of rural water supply as multiple and interlocking that requires a systematic approach. Moreover, the productive use of water at household level should be mainstreamed in the policy of rural water supply and management efforts of the country as equally important as the irrigation sector.
FoAA 10: Effectiveness of Modular Training at Farmers' Training Centre: The Case of Fogera District, Amhara Region, Ethiopia

Wuletaw Mekuria

Department of Rural Development and Agricultural Extension, Faculty of Agriculture, University of wuletaw.m@gmail.com, P.O. Box 196, Tel. +251918714477, Gondar, Ethiopia

ABSTRACT

Background: In Ethiopia agriculture accounts for about 47% Growth Domestic Product and 80% of export earnings. About 83.8% of population is living at rural areas engaging in agriculture for its livelihoods (MoARD, 2009). Adult literacy rate and Human Development Index were 36.3 % and 0.406 respectively (MoFED, 2009). Ethiopia had established 25 Technical Vocational and Education Training Colleges at the beginning of 2000 with the main objective of developing human resource and institutional capacity (Habtemariam, 2007). Attending modular training helps farmers to acquire knowledge and skill which enables to produce market oriented commodities.

Objectives: The overall objective of this study was to assess the effectiveness of modular training in the study areas.

Methods: Multi-stage sampling technique was applied. First, four kebeles at district were selected purposively. Next, stratified sampling was employed as trained and un-trained farmers. Furthermore, a total of 120 respondents were selected randomly in probability proportional to size of each category. Both qualitative and quantitative data were collected from primary and secondary sources. Interview schedules, focused group discussions, key informant interviews, personal observations and case study tools were administered. Linkage matrix, actor identification map, Likert scale and teacher-made-test were employed for the purpose of data analysis.

Result: T-test indicated that there was significance difference between trained and untrained farmers (P=0.004) at 1% probability level. Practice assessment indicated that the mean difference of trained farmers were significantly higher than untrained farmers at 5% probability level (p=0.05). Likert scale showed that trained farmers had more favourable attitude than untrained farmers (P=0.000) at 1% probability level. Twelve actors were involved in various activities towards modular training and functioning of centres. Resource allocation, information sharing, communication, and professional relationship were the major linkages. Strong linkages were between centres and Improving Productivity Market Success, farmers themselves, cooperatives, development agents, office of agriculture, and Amhara Credit and Saving Institute. Agriculture at zone, bureau and federal level, and woreda administrators were identified as medium linkages while schools and ATVET were identified as weak linkages. Wet land project, investors, research centres, local organizations, and NGOs were identified as missed actors. There were no such significant deviations at farmer training centres level but individual smallholder-farmers could emerge better than others as positive deviants and raised their level of living that could be scaled-up.
Conclusion: Although season of training was convenient; less number of females, theoretical nature of training-method was the major deficiencies. Trained farmers acquired better knowledge, skill and attitude than untrained farmers. But there were no sufficient scenarios identified towards training. Therefore, the overall objectives of trainings were not achieved i.e. very few numbers of farmers were addressed within five years. Monitoring, evaluation and feedback were not undertaken by centres. There was no clear linkage modality how development partners could integrate with various institutions.

FoAA 11: Analysis of Determinants Influencing Adoption of Malt-Barley Technology: the Case of North Gondar, Ethiopia
Wuletaw Mekuria¹, Abebe Dagnew², Essa Chanie², Daniel Taddese³
Department of Rural Development and Agricultural Extension¹, Agro-Economics² and plant science³ Faculty of Agriculture, University of Gondar, Ethiopia; P.O.Box 196, Gondar
Email: wuletaw.m@gmail.com, Cell-phone: +251918714477

ABSTRACT

Background: About 16.5 million ha is under cultivation and grains are the most important field crops, occupying 86% chief livelihoods of most Ethiopians (ICARDA, 2008). Nevertheless, many smallholder farmers and their families are challenged with the declining of productivity that is not easily overcome; caused by various factors contributed for slow growth of economy (MoFED, 2010). Although, considerable numbers of new technologies have been generated, adoption level by farmers is limited (Bayeh et al, 2011). Production of malt-barley was started in 2006, following the adaptation of the crop at the study areas. However, the intensity and determinants of adoption of malt-barely technology has not been assessed and evaluated.

Objective: The research was conducted to analyze determinants influencing the adoption of malt-barley technology in North Gondar, Ethiopia.

Methodology: Multi-stage sampling technique was applied. First, one kebele in Debark and two kebeles in Wogera were selected purposively. Next, stratified sampling was employed as adopters and non-adopters. Furthermore, a total of 120 respondents were selected randomly in probability proportional to size of each category. Both qualitative and quantitative data were collected from primary and secondary sources. Interview schedules, focused group discussions, key informant interviews, personal observations and case study tools were administered. Tobit econometrics model, linkage matrix and actor identification map were applied for the purpose of analysis.

Result: Malt-barley technology has been introduced to the study areas 7 years ago. Kebele cooperatives, agriculture office, Organization for Rehabilitation and Development in Amhara, development agents and Amhara credit and saving institution were strongly linked development actors who played various roles and they have been accomplished many activities in relation to malt-barley technology. These actors were said to be primary actors. Secondary and tertiary
actors were also identified using linkage matrix. Fourteen explanatory variables were included in the model and access to improved seed, frequency of contact with development agents and access to credit were the major determinants that influence adoption and intensity use of the technology significantly. Intensity of adoption was computed as adopter categories of 0%, 10% and 90%; that were low, medium and high adopters. Although almost all adopters had better level of adoption, the rate of adoption was limited. In the study areas only about 32.4% of farmers were participated in malt-barley technology for the past 7 years, because of many challenges including non-participation of missed actors and unavailability of improved basic seeds; the overall level, rate and intensity of adoption were not recorded as expected.

**Conclusion:** Institutional linkage, extension service and access to inputs (credit and improved seed varieties) are the key areas for adoption of newly introduced malt-barley technology. Therefore, due to many factors level of adoption and its rate is low and slow respectively.
ABSTRACT

Background: Cowdriosis is an acute, fatal, non-contagious, infectious, tick-borne rickettsial disease of ruminants caused by *Ehrlichia ruminantium* and transmitted by *Amblyomma* ticks.

Methods: Longitudinal study was carried out at University of Gondar, dairy farm having an average of 80 cross bred cows based on clinical, post-mortem and squash smear examinations.

Results: The average incidence rate of the disease at animal level was 12.33 cases per year. The age of animals that showed the clinical sign ranged from two months to 3.5 years and the average was 1.27 years. Cases were recorded every season of the year but more common in rainy season than other seasons. Out of 37 cases, 26 (70.27%) were female whereas 11 (29.73%) were male animals. The body temperature was 37 to 41.5°C. Reduced consumption of feed or cessation of feeding (anorexia), depression, congestion of the conjunctiva, grunting, shivering, pressing the head against the wall, chewing movement, salivation and self inflicted trauma were observed in most cases of cowdriosis. The most commonly observed post-mortem lesion were hydropericardium, petechial or generalized haemorrhages in the peritoneum or in many other organs.

Conclusions: It was possible to confirm presence of cowdriosis in the farm and any cowdriosis should be suspected in all unrecognized febrile conditions such cases should be reported immediately and treatment should be started as early as possible.

Keywords: Longitudinal Study, Cowdriosis; Dairy Farm
ABSTRACT

Background: Ticks are obligate blood feeding ectoparasites of vertebrates and induce huge production loss in livestock industry and creating serious public health problems in the world. Objectives: This study was conducted to explore practices that are performed by livestock owners to control tick infestation in some districts of North Gondar, Ethiopia and to identify potential herbal materials used to control tick infestation in livestock and to assess the efficacy of commonly used acaricides against Amblyomma ticks in the area.

Methods: Three districts of the zone were selected from each agroecological zones. In the district, the data were collected using semi-structured questionnaire and field observation. Sixty randomly selected livestock owners were used as the source of information. For laboratory experiment, adult Amblyomma ticks were collected on the field and exposed to acaricides (Amitraz and Diazinon). The recommended, double and half doses were prepared. One mL of the liquor was added on Petri dish with a filter paper fit at its bottom. Then the acaricide was evenly distributed and 10 ticks of about equal size were placed on each Petri dish and it was closed. Distilled water was used as a control. The number of ticks live or dead was counted after 24 hrs of exposure. Sheep infested naturally with ticks were kept in door and grouped into three containing three animals each group. The first group was treated with diazinon, the second group was treated with Amitraz, and the last group was left untreated as control. The acaricides concentration was based on the manufacturer’s recommendation.

Results: Tick infestation was prevalent in all districts. Loss of body condition, disease transmission and damage on the skin were most commonly mentioned effects of tick infestation on the animals. The most commonly used tick control methods were use of acaricides and manual removal, however, use of herbs, washing with soap and cutting with sharp materials were also mentioned by respondents. Nine potential medicinal plants were identified that could be used to kill or repel ticks. Conclusion: tick infestation is the problem in the districts. In the laboratory, significant difference \((P<0.05)\) was not observed between two acaricides on the killing effect at double, recommended and half the concentrations. On live animals, there was a significant \((P < 0.05)\) difference between two drugs. More ticks were died in Amitraz treated group than sheep treated with diazinon. In conclusion, tick infestation is the problem in the districts. Livestock owners use different techniques to remove tick from the animals and their effectiveness has to be evaluated. The two
Acaricides were performing almost equally in the laboratory but Amitraz in better on live animals. To confirm resistance further studies using standard products are needed. **Keywords:** Acaricides; Amblyomma ticks; Efficacy; Herbal plants; North Gondar, Susceptibility

**FVMA 3: Effects of defoliation on dry matter yield and butritive values of Hyparrhenia rufa (Nees) grasses**

*Getachew Assefa¹, Mulugeta Ayalew, Malede Birhan, Hassen Kebede*

¹ Faculty of Veterinary Medicine, P.O.Box 196, University of Gondar, Gondar, Ethiopia

**ABSTRACT**

Wastage of hay is one of the main problems in many smallholder livestock farmers and hay producers in areas where Hyparrhenia rufa is the dominant grass species. This is due to low palatability caused by low leaf to steam ratio and woodiness of Hyparrhenia rufa steam at maturity. The objectives of this research was to determine appropriate stage and frequency of defoliation which result higher quality, more dry matter of hay made from final re-growth and total harvest of Hyparrhenia rufa (Nees) grasses in main rainy season of the year. Thus the performance of Hyparrhenia rufa (Nees) were examined under mowing at single, double and triple defoliation when it reached at 30, 70, 110, 150 and 190 cm height of growth. The defoliation height at each growth and re-growth were constant (15 cm from ground). The total hay yield were measured and sample of treatment results (15 final cut samples, 15 composite samples of middle cuts and one control; a total of 31 samples) were sent to laboratory for chemical analysis for the determination of degree of lignifications and total amount of nutrient harvested at different treatment. Finally, the data were analyzed using JMP-5 (a statistical software developed by SAS company). The experiment was conducted on station (at UoG dairy farm) with split plot design. The research has shown that defoliating Hyparrhenia rufa (Nees) at different stage of maturity and frequency has highly significantly (P<0.01) increased the leaf percentage. The highest leaf percentage (81.91%) was observed at triple defoliation when the plant reached 30 - 40 cm. However, significantly (P<0.01) highest leaf yield (5.91 tone/ha) is obtained in triple defoliation of Hyparrhenia rufa when it reached at 110 to 120 cm height. Laboratory results have also confirmed that significantly low lignin content and highest invitro dry matter digestibility observed when Hyparrhenia rufa defoliated at 110 to 120 cm height of growth. Since digestibility positively and degree of lignifications negatively correlated with intake and palatability, it is concluded that, wastage of hay made from Hyparrhenia rufa grass can be reduced by repeated defoliation when the plant reached at 110 to 120 cm growth.

**Key words:** Effect of defoliation, Hyparrhenia rufa
FVMA 4: Assessing the Public Health Impacts of Waste Management Problems at Selected Abattoirs and Hospitals in Amhara Region and Dashen Brewery Factory

Tadesse Guadu*, Seleshe Nigatu, Mersha Chanie, Legesse Garedew, Tamiru Birhanu

*Department of Veterinary Epidemiology and Public Health (VEPH), Faculty of Veterinary Medicine, University of Gondar, +0911096660, P.O. Box 196, Gondar, Ethiopia

ABSTRACT

Rising urban population growth, limited municipal resources, and the complexity of municipal waste management in both industrialized and developing countries have complicated the relationship between environmental management and the health of urban inhabitants. The main objectives of this research work was to identify the public health impacts of the existing waste management problems, to encourage investment on waste recycling and consultation on waste disposal and management systems, and to recommend an appropriate approach to address the impacts identified on the respective organizations in Amhara region. Institutional based cross-sectional study design was used for assessing the Public Health Impacts of Waste Management Problems at Selected Abattoirs and Hospitals in Amhara Region, namely Bahir Dar and Gondar Towns, and Dashen brewery factory in Gondar towns from July, 2012 to June, 2013. The sample size of the study was calculated using the formula for the estimation of single proportion, which gives a total of 421 study subjects, including 10% non response rate and then systematic random sampling technique was employed for selection. The source populations were all neighboring residents, employees and clients of the institutions. The respective towns neighboring resident households were recorded and have house number in their administrative area. The data collecting questionnaires was pre-tested out of the study population and the questionnaire was translated to Amharic (native language) ahead of time. After complete check-up the data was coded and entered to SPSS version 20.0 statistical package for windows and analysis was made. The study result indicated that the waste management system of the study areas are very poor, associated with diverse public health impacts. Unlike hospitals and abattoirs of the study areas, Dashen Brewery Factory has a good overall management of the waste water, water usage, and use of treated water for other purposes like agriculture and its effectiveness. It is highly recognized that the existing waste collection and disposal services are inadequate both in terms of coverage and sanitary treatment of the wastes in hospitals, abattoirs and their surroundings. To improve this, the hospitals and abattoirs have to capacitate themselves to safely mange their wastes with relevant manpower and equipment both qualitatively and quantitatively, increase waste storage sites, re-usage of waste water and recycling of treated water, taking the good experience of Dashen brewery factory, and distribute at reasonable distances for efficient use.

Key words: - Waste, waste water, waste management problems, health impacts, recycling.
FVMA 5: Helminth parasites of walia ibex (capra walie) at simen mountains national park, natural world heritage site, northern ethiopia.

Basaznew Bogale*, Achene Melaku, Mersha Chanie Ayalew Berhanu Tewodros Fentahun

*Department of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, Gondar University, P. O. Box ; 196, Gondar, Ethiopia.

ABSTRACT

Introduction: Walia ibex (Capra walie) is critically endangered ungulate, endemic in Ethiopia which is found in the Simen Mountains National Park (SMNP). Parasites and infectious diseases of wildlife are a major threat to conservation of endangered species. Thus, there is a great need for studying and documenting the prevalence of parasites among endangered species in the wild. Transmission of pathogens at the wildlife-livestock interface can occur in both directions and may therefore pose a threat to either agriculture or conservation.

Objectives: This study was conducted to determine the prevalence of helminth parasites of free-ranging Walia Ibex at SMNP, northern Ethiopia. A total 167 faecal samples were collected and examined by floatation, sedimentation and Baermann techniques.

Results: The overall prevalence of helminth infection was 85.62% (143/167). Of this, 78.44% were nematodes and 7.18% cestodes. There were no trematodes species (spp) recovered. The helminth parasites, detected were strongyle spp. (78.44%), Nematodirus spp. (14.97%), Moniezia spp. (7.18%), Strongyloides spp. (5.38%), Trichuris spp. (4.19%), Ascaris spp (2.99%) and lungworms (26.34%). Multiple parasitic infections (78.43%) were common whereas 11.76% were harboured only one parasitic species.

Conclusion and Recommendations: The present results indicated that the infections caused by helminthes are significantly common in the study area, so further studies on seasonal dynamics and transmission patterns of helminthes are required to design appropriate worm control strategies.

Keywords: Prevalence, Helminthes, Walia ibex, SMNP, Ethiopia

FVMA 6: Prevalence, Intensity and Parasite Composition Of Gastrointestinal Helminth Parasitism Of Walia Ibex (Capra Walie) At Simen Mountains National Park (Smnp), Northern Ethiopia

Basaznew Bogale, Achene Melaku, Mersha Chanie Ayalew Berhanu Tewodros Fentahun

Department of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, Gondar University, P. O. Box ; 196, Gondar, Ethiopia.

ABSTRACT

Introduction: In Ethiopia, the consumptive and nonconsumptive utilization of wildlife is a significant foreign exchange earner. Parasites and infectious diseases of wildlife are a major threat to conservation of endangered species. Thus, there is a great need for studies documenting
the prevalence of parasites among endangered species in the wild. The endangered Walia ibex (*Capra walie*) is the most distributed ungulates of the genus *Capra* found in the SMNP. It occupies a narrow habitat niche and is vulnerable to disease and competition from livestock. However, there is no information in the literature about the parasitic infection of *Walia ibex*.

**Objectives:** The objectives of this study were to determine the prevalence, intensity and species composition and to provide baseline knowledge about of gastrointestinal (GI) helminth parasites of Walia ibex at Simen Mountains National Park, Northwest Ethiopia.

**Materials and methods:** A cross-sectional study design was used to determine the prevalence, intensity and parasite composition of GI helminthes in Walia ibex, based on parasitological surveys.

**Results:** Out of the total 167 examined faecal samples, 153 (91.61%) were positive for helminth parasites as single and mixed infections. Of this, 142 (92.81%) and 11 (7.18%) presented nematode and cestode (*Moniezia*) parasites, respectively. Lungworm larvae were found in 26.34% of the examined samples as single or mixed infections. Coccidian oocysts were also observed in 83.83% of the total samples examined. Trematode eggs were not detected in this study. On the basis of egg morphology, five types of helminth eggs were identified: strongyle-type (75.82%), *Nematodirus* (12.42%), *Moniezia* (5.88%), *Trichuris* (3.27%), and ascarids (*Toxocara*) (2.61%) eggs. Multiple parasitic infections (78.43%) were common and up to 4 to 5 different parasite species were found in the same individual faecal sample. The overall mean faecal egg count per gram of faeces (EPG) for positive samples combined was 587.59±47.08. The intensity of infection in terms of faecal egg counts ranged from 100-3700 EPG in infected samples. The severity of infection in relation to EPG was low (77.44%), moderate (12.78%) and severe (9.77%) of the samples, respectively. Coproculture showed the presence of predominant nematode species of *Trichostrongylus*, *Cooperia*, *Haemonchus*, *Ostertagia*, *Bunostomum*, *Nematodirus* and *Oesophagostomum* in a decreasing order of prevalence.

**Conclusion and Recommendations:** Even though the present study results indicated that the infections caused by gastrointestinal helminth parasites are significantly common in Walia ibex, the observed threshold level of egg numbers may be regarded as low to moderate that mainly manifests as sub-clinical infections with subsequent subsistent low degree of pasture contamination. However, the host range of many of these parasites is broad and could serve as a potentially stable source of infection to other susceptible wild and domestic animals. So, further studies on the seasonal dynamics and transmission patterns of helminthes are required to design the appropriate worm control strategies.

**Key Words:** Walia Ibex, Prevalence, Helminth, SMNP
FVMA 7: Evaluation of Barley Green Forage as Animal Feed Intercropping with Vetch in North Gondar Zone, Ethiopia

*Malede Birhan, Mulugeta Aayalew, Getachew Aasefa
*Department of Animal Production and Extension, Faculty of Veterinary Medicine, University of Gondar, P.O.Box: 196, Gondar, Ethiopia. Email: maledeb@yahoo.com, +251918220992

ABSTRACT

Introduction: Livestock feeds in the developing world come from a range of sources including crop residues, planted forages, agro-industrial by-products, grazing and others. Improved feeding of livestock comes from producing more feed, improving feed quality, or smoothing seasonal imbalances in feed supply through grass legume intercropping. Most methods which most highland farmers are in the country. Feed enhancement has technical aspects but often relies on organizational change including enhancing input supply for feed production. Feed is an input into livestock value chains and feed needs to be considered in a value chain context if improvements are to be made.

Objectives: The objective of the study was to evaluate the optimum stages of forage harvest for chemical composition and quality of forage barley/vetch mixture for better yield for livestock feeding in the highland and central highlands of the country.

Research methodology: The research was designed and employed randomized complete block design (RCBD) with three replication in the mixture. The plot size was 2 x 5 m. Data was subjected to analysis of variance using SPSS Statistical Package for chemical analysis and forage quality.

Results: Highly significant variation (P<0.01) on Crude Protein contents (CP) (24.15%) at harvesting stages one and CP yields of 1.55t/ha was also obtained at harvesting stage two (HS2). In all observation increasing stages of harvest the forage quality becomes deteriorated while increasing of the fiber contents (NDF). Acid detergent fiber (ADF) was high after two successive cutting of forage but all the fiber content is high at HS3. Acid detergent lignin (ADL) was higher at HS3 and the lowest value was obtained at HS1. In general, the fiber contents were increased with increasing the stages of harvesting as a whole. In vitro dry matter digestibility (IVDMD) was higher with the value of 78.5 at HS1 and followed by HS1 with the value of 72%. The highest metabolizable energy value was recorded at HS1; digestible crude protein (CP) was also higher at HS1, with the value of 3.57%.

Conclusion: With all these findings the experiment result of this study was showed that, harvesting of forage at milk stage could be considered as the best stages of cutting for barley: vetch forage mixture.

Key words: Evaluation, Cutting, Quality, Barley, Vetch, Ethiopia
FVMA 8: Challenges, Constraints and Prospects for Bee Keeping Management and Honey Production in North Gondar Zone, Ethiopia

*Malede Birhan, MulugetaAayalew, GetachewAasefa and Kidanie Misganaw

*Faculty of veterinary medicine, department of animal production and extension, p.o.box: 196, Gondar, Ethiopia, email: maledeb@yahoo.com/ +251/0918220992

ABSTRACT

**Introduction:** There is no well-documented evidence that indicates when and where beekeeping practice started in Ethiopia. However, beekeeping had started in the country between 3500-3000 B.C. The moderate climate of Ethiopia makes one of the most successful countries in the tropics in box hive utilization. Ethiopia has a share of around 23.58 and 2.13% of the total Africa and world honey production respectively. Ethiopia's wide climatic and edaphic variability have endowed the country with diverse and unique flowering plants and harbouring a distinctive flora and fauna, thus making it large number of bee colonies and the long established practice of beekeeping.

**Objectives of the study:** The objectives of this study were, to see future fate and prospects of the apicultural sub-sector and forward an appropriate direction to alleviate the existing circumstances in area, to increase the different types of hive products and be competitive in the domestic and export markets and to improve the income of the beekeeper so that they could secured the livelihood of smallholder farmers in the study area.

**Research methodology:** A cross-sectional survey study was conducted using different approaches to collect primary information on four purposively selected kebele (Gebeba, Chauhit, Sekelt and Deresghe) 150, 200, 168 and 132 sample respondents were employed in the study district respectively. These include a focused group discussion, interview with key informants and household survey. The kebele was selected based on the high potential for honey production and number of bee colonies found in each kebele and some other administrative facilities.

**Results and Conclusion:** The result of this research was showed that, 88.6% of the interviewers were assured that, honey yield and wax production becomes tremendously decreased in the study districts. Again, 91.2% of the focus group discussion was indicated that there are serious problems in the sector (various disease types, predators and some other management problems) which are the challenges of the beekeepers in the study area. 89.24% of the interviewers substantiate that the price of honey/kg and price of bee’s colony were very satisfying but there may be a disease transmission in the different districts and almost 98% of the respondents are negative attitude towards about the future prospects of the bee colonies in the country in general and in the study area in particular.

**Key word:** challenges, constraints, prospects, beekeeping, honey, Ethiopia.
FVMA 9: Assessment of Skin and Hide Problems in Three Selected Districts of North Gondar Zone

Mersha Chanie*, Basaznew Bogale, Ayalew Berhanu, Achenef Melaku and Tewodros Fentahun
*Department of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, University of Gondar, P.O.Box, 196, Gondar, Ethiopia. Email: kasuamare@gmail.com; Cell Phone: +251 918 26 71 06 or +251 913 18 68 24

ABSTRACT

Introduction: Studies in Ethiopia indicated the extent of skin and hide damages and ectoparasites were major obstacles of ruminant. Lice, keds, mange mites and ticks are the major causes of skin diseases in Ethiopia. Of these, Bovicola ovis and Melophagus ovinus in sheep and mange mites in sheep and goats were reported to be the most serious causes of skin diseases of small ruminants affecting their productivity and quality of skins. But not any available data found which shows the status and effects of skin and hide diseases in North Gondar.

Objectives: The objectives of the study were to expand baseline facts and data regarding skin and hide damages due to skin and hide diseases and mechanical damages on live animals, pre and postslaughter damages mainly from sheep, goats and cattle, to assess the extent and economic significance of skin and hide problems and to quantify the skin and quality downgrading and rejections.

Materials and Methods: The study on assessment of skin and hide problems, quality in tanneries’ views and major reasons of rejection at raw, semi-processed and processed stages in north Gondar was conducted from December 2010 to September 2011. The study was done on livestock owners, local skin and hide collectors and two tanneries. The methods employed for the collection of data were inspection of skin and hides, distribution of structured questionnaires, interviews, visits of tanneries and collection of skin and hide sample for histopathology. The skin and hide scrapings and biopsy tissues collected from clinically manifesting skin and hide lesions of small ruminants and cattle were used to see the degree of damages on to the skin and hide. Therefore, the effects of these lesions on the quality of raw, semi-processed and processed skin and hide were analyzed. Important data analysis was done using excels spreadsheet, Stata and SPSS.

Results: The most commonly encountered causes of hide and skin problems include ectoparasites, bacteria, viruses, fungal diseases and mechanical damages. Most prominent lesions of skin and hide due to infectious causes were seen on either in the epidermis or dermis. The lesions vary from simple allergic reactions to severe epidermal and dermal involvement. Some of the lesions were alopecia; nodules containing pus, scabs, branding lines and lichenification. Skin and hide diseases were known to affect the quality of processed skin and
hide and were responsible for downgrading and rejections. In particular, dermal lesions cause much of the defects in processed skin as complained by tanneries.

Conclusions and Recommendations: Various causes of skin and hide diseases were found affected were mechanical, viable and management problems. The characteristic gross appearances of skins and hides were branding, decay and folding, thickened skin, encrustation, vesicles, papules, nodules and area of superficial erosions and ulcerations. Histopathologically, changes were characterized by the presence of parakeratotic hyperkeratosis, acanthosis, and spongiosis; however, such lesions were varying with the specific causes. Thus farther study on the subject and better prevention and control method different from usual should be applied.

Keywords: Downgrading/ Rejections/Skin and Hide/ North Gondar

FVMA 10: Clients' Perceptions of Delivery of Veterinary Services in Northwest of Ethiopia, Amhara National Regional State

Mersha Chanie*, Gizachew Gelaw, Tewodros Fentahun, Basaznew Bogale, Ayalew Berhanu, Achenef Melaku

*Department of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, University of Gondar, P.O.Box, 196, Gondar, Ethiopia. Email: kasuamare@gmail.com; Cell Phone: +251 918 26 71 06 or +251 913 18 68 24

ABSTRACT

Introduction: In Ethiopia there is no all-inclusive studies done to assess animal health delivery system at district level and even veterinary faculty are seen overlooking this agenda from research thematic areas. No matter how, the problem is a bottleneck for our veterinary service delivery system and to give better animal health services at any stage.

Objectives: The objectives were assessing, comparing and contrasting the quality of the current structure and process of veterinary service delivery system and satisfaction of clients.

Materials and Methods: A cross-sectional study was conducted from October 2011 to May 2012 in six selected sites of Northwest Ethiopia (Bahir Dar, Gondar, Maksegnit, Dembia Woreta and Debre Tabor). Questionnaire survey, visits and interview were carried out to come up to the results.

Results: A total of 400 clients were contacted and interviewed. The result indicated that out of 400 clients 91.75% (367/400) encountered service difficulty due to one or more problems of veterinary services. Major reasons why clients went to veterinary clinic were 61.75% for deworming their animals, 9% seeking for drugs only, 5.25% for vaccination alone, 5.25% for vaccination and ectoparasites treatments. However, there was no stastically significant different (p > 0.05) difference between the clients who were using government or private veterinary clinics. Moreover, client’s satisfaction about the service delivery was 62.75% dissatisfied, 37% were satisfied, 0.25% satisfied, and there exists statistical significance. The present study showed us that there is low quality structure and process of veterinary service delivery system, poor customer handling and low satisfaction of the clients about the service.
Conclusion and Recommendations: The present study reveals a high prevalence rate of the factors in the study areas, which indicated that lack of appropriate veterinary service delivery. This in turn might be linked to lack of integration between the government, veterinary professionals and the clients about animal health management and production systems. This result indicated that this poor veterinary service delivery has remained responsible for substantial losses in livestock industry in the study districts in particular and in the country in general. In recommendation; the government should assigned veterinary professionals to each clinic, education and extension service should be delivered to the clients about animal diseases, animal production and management systems, veterinary clinics should be concentric to the communities, private veterinary clinics should be licensed and encouraged, regular vaccination and deworming should practiced and further studies should be conducted in order to investigate solutions to improve the current status of animal health and production.

Key words: Clients, Northwest Ethiopia, Veterinary Service Delivery.

FVMA 11: A cross-sectional survey of bovine trypanosomosis and its vectors in Baro-Akobo and Gojeb river basins, Southwestern Ethiopia

Zewdu Seyoum*, Getachew Terefe, Hagos Ashenafi

Unit of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, University of Gondar, P.O.Box: 196, Gondar, Ethiopia; e. mail: zawdus@yahoo.com; +251-912065499/911791783

ABSTRACT

Background: Trypanosomosis is a zoonotic parasitic disease that causes serious economic losses in livestock, particularly in sub-Saharan countries. In Ethiopia, tsetse transmitted animal trypanosomosis is one of the major impediments to livestock development and agricultural production in Southern, Southwestern, Western and Northwestern part of the country after the imminent eradication of Rinder pest. The disease contributes negative impact to the over all development in general and to food self-reliance efforts of the nation in particular. The annual losses to the national economy are estimated to exceed $US 200 million due to mortality and morbidity of livestock, denied access to land resource and the costs of controlling the disease.

Objectives: This study was carried out in Baro-Akobo and Gojeb river basins, Southwestern Ethiopia to have a base line data on prevalence and distribution of bovine trypanosomosis, to determine associated explanatory factors and, to identify vectors prevailing and estimate fly densities in the basins.

Methods: Blood samples were collected from 582 randomly selected local zebu (including very few Sheko breed-Boss taurus) breed of cattle in eight peasant associations of the two selected districts in the river basins. The collected blood samples were examined using haematological and parasitological techniques. The data were analysed using logistic regression and one-way ANOVA tests.
Results: From 582 sampled animals, 86 (14.8%) were infected with different trypanosome species. The infections were predominantly due to *Trypanosoma congolense* (53.5%) followed by *T. vivax* (31.4%), mixed infection of *T. congolense* and *T. vivax* (10.5%), and *T. brucei* (4.7%). The infection rate of trypanosomosis was significantly associated (P<0.05) with altitude, districts/locations and, age and body condition, but no significant differences (P>0.05) were observed between sex and coat color of animals. The mean packed cell volume (PCV) of parasitaemic animals (21.1±4.4%) was significantly lower (P<0.05) than those of aparasitaemic (26.4±4.7%); and mean PCV value of poor body condition was significantly different (P<0.05) from good and moderate body conditions. A total of 785 flies were caught, of which 578 (73.6%) were tsetse flies and the remaining were *Stomoxys* (25.5%) and *Tabanus* (0.9%). The apparent mean tsetse fly density was significantly different (P<0.05) among districts/geographical locations (3.5±5.1 flies/trap/day at Guraferda district and 1.5±3.4 flies/trap/day at Gimbo district.

Conclusion: This study revealed that bovine trypanosomosis is more prevalent in lower altitude; older and poor body condition animals. Tsetse density also coincides with altitude and geographical location, where there was high tsetse density in lower altitude and Baro-Akobo river basin/Guraferda district/. In conclusion, the disease and its vectors are widely prevalent; there is an urgent need to launch an integrated control program to minimize the prevalence of trypanosomosis and the density of tsetse in the river basins.

Keywords: bovine trypanosomosis; baro-Akobo; gojeb; river basin; prevalence; tsetse, Southwestern Ethiopia

**FVMA 12 : Farmers’ perception of impacts of bovine trypanosomosis and tsetse fly in Baro-Akobo and Gojeb river basins, Southwestern Ethiopia**

Zewdu Seyoum*, Getachew Terefe, Hagos Ashenafi
Unit of Veterinary Paraclinical Studies, Faculty of Veterinary Medicine, University of Gondar, P.O.Box:196, Gondar, Ethiopia e-mail: zewdu@yahoo.com; mobile: +251-912065499/911791783

**ABSTRACT**

**Background:** Trypanosomosis via causing anaemia, emaciation, production loss and death is arguably the most important constraint to livestock production in Sub-Saharan, including Ethiopia and its impact in Baro-Akobo and Gojeb river basins (endemic areas for tsetse flies) is unknown. It resulting in high mortality and poor productivity, and also renders fertile lowland areas of Ethiopia unsuitable for cattle based agriculture. The annual losses to the national economy are estimated to exceed US$200 million due to mortality and morbidity of livestock, denied access to land resource and the costs of controlling the disease.
Objectives: This study was carried out from November 2011 to April 2012 to assess farmers’ perception of the presence, impact, management and the need of intervention programs of bovine trypanosomosis and tsetse fly in Baro-Akobo and Gojeb river basins, Southwestern Ethiopia.

Methods: A cross-sectional study design and semi-structured questionnaire format were employed to know the perception of the farmers. The raw data were summarized and tested using descriptive statistics, $\chi^2$-test and Poisson regression.

Results: The result of this study showed that 94.1% of the respondents listed bovine trypanosomosis as the prime economically important cattle disease which accounts on average for 64.6% of the total annual deaths in the year 2011/2012. Estimated mean annual financial loss via mortality due to trypanosomosis was reported to be 3501 Ethiopian Birr (US$200)/household. The reported trypanosomosis suggestive signs were consistent with literature report and livestock owners strongly associated the disease with biting flies (particularly, tsetse fly). Owners also noted the seasonality of the disease and its vectors, i.e. May and June are peak risk months of the year. Chemotherapy was reported the major method to combating the problem, mean frequency of treatment being 5.7 times per animal per year. Because of the economic burden of the disease, livestock owners expressed strong interest and willingness to support for the establishment of control projects in their area.

Conclusion: The study revealed that livestock keepers are familiar with bovine trypanosomosis and its vectors as well as its impacts. Thus, trypanosomosis and tsetse control activities integrating the local communities’ knowledge can be an important tool towards minimizing the impacts of the disease and its vector in the area.

Keywords: trypanosomosis; farmers’ perception; baro-akobo; gojeb; river basin; southwestern Ethiopia

FVMA 13: Molecular characterization of ORF VIRUS isolated from contagious ecthyma infected sheep and goats in Northwest Ethiopia

Mebratu Gyohannes
Faculty of Veterinary Medicine, University of Gondar, Gondar, Ethiopia

ABSTRACT

Introduction: ORF virus (ORFV), the prototype of the genus Parapoxvirus (PPV), is the etiological agent of contagious ecthyma, a severe exanthematic dermatitis that affects domestic and wild small ruminants and it is worldwide in distribution.

Objective: to determine the status of ORFV in small ruminants using viral isolation and identification followed by molecular characterization using Polymerase Chain Reaction tool, and to identify the information about the potential risk factors of the disease in the study area.

Study Design: A cross sectional study design was employed from October to January, 2005.
**Sampling Method:** The study was conducted on clinically contagious ecthyma suspected animal subjects (purposive sampling) which were coming to the veterinary clinics in the study area. **Sample size:** around 8 study subjects from the study district (7 sheep and 1 goat) was selected and included in the study.

**Study Methodology:** According to the diagnostic laboratory manual of terrestrial animals set by Office for International Epizootics (OIE) the virus suspected sample processing, virus isolation and inoculation in cell culture protocols were conducted and DNA was isolated from the ORF virus suspension by using a commercial kit and characterized using PCR tool. **Result:** The DNA of 8 suspected samples of ORFV was amplified using a thermocycler and followed by agarose gel electrophoresis and all the samples were found showing distinct bands. A 100-10,000bp length DNA ladder was used as a size marker for the suspected samples and all the samples were as lengthy as the positive control which was around 160 base pairs. The result of Cytopathic Effect also revealed that a total of five samples out of eight samples got positive. Chi-Square analysis of different putative risk factors with ORF infection indicated that no statistical significant difference were observed among the age and sex of individual subjects (p>0.05). But a statistically significant difference (p<0.05) was observed among the breed and species of individuals in all the variables. In addition to those factors, the impact of herd size, management and treatment history was also assessed and the incidence of the disease was slightly higher in small herd size animals, poorly managed and in animals with no treatment history.

**Conclusion and Recommendation:** Clinical diagnosis based on the tentative clinical picture of the disease and associated epidemiological parameters have been used routinely to identify ORF viruses in Ethiopia. And this type of diagnosis can not reflect what the actual disease is. So to know the actual distribution of the disease in all regions of Ethiopia advanced molecular diagnostic tools should be implemented in order to implement a disease development programs including vaccine development for this particular disease.

**Key Words:** ORF Virus, Culture and Isolation, Polymerase Chain Reaction, Cytopathic Effect, Sheep and Goats, North West Ethiopia.
PART VII: SCHOOL OF TECHNOLOGY

SoTA 1: Development of Appropriate Methods for Minimization of Sand Casting Defects, Case Study

G/micael G/mariam¹, Solomon Mesfin² and Ibrahim Nurhussien²

¹Lecturer, Mechanical Engineering Department, School of Technology, Gondar, Ethiopia.

ABSTRACT
Production of casting involves various processes like pattern making, molding, core making and melting etc. Metal casters try to produce perfect castings. But it is very difficult to produce defect free castings and the castings may have one or more defects. These can be minimized by taking correct remedial measures in the tools like pattern, core box and foundry processes like pattern making, molding, core making, melting and pouring practice. Correct identification and characterization of these defects is a pre-requisite for development of remedial measures. Modern foundries have sophisticated inspection equipment that can detect small differences in size and a wide variety of external and even internal defects. But small or homemade foundries did not have such equipments to inspect casting defects and they cannot minimize the defects. This paper presents a systematic procedure to identify as well as to analyze major casting defects and develop appropriate remedial measures. The root cause identification and corrective action development were done by defect diagnostic study and remedial approach. The approach was tested and validated by case study done in ‘Mohamed aluminum products foundry’. Outcome of the validation trials showed a substantial reduction in rejection rate of castings.

Keywords: sand mold, casting defect, Ishikawa diagram, Pareto chart
PART VIII: SCHOOL OF EDUCATION

SoEA 1: Analysis on the role of Educational Leadership for the realization of Quality Education System in Ethiopia: The case of South and North Gondar Administrative Zonal Preparatory Secondary Schools

Melese Birhanu*, Yitayal Alemu, Mekuriaw Mengistnew
Department of Educational Planning and Management, School of Education, University of Gondar

ABSTRACT

This research is aimed at to make intellectual analysis on the role of educational leadership for the realization of quality education system in Ethiopia in particular to South and North Gondar Administrative Zonal preparatory secondary schools. To hold this study, ‘Mixed Methods Research Design’ was employed in order to analyze facts about the role of educational leadership for the realization of quality education system which in turn helps schools audit, enhance and assure quality education. Qualitative data were obtained through interviews with the selected key participants; school principals. Questionnaire was mainly used to gather data from the sample respondents. Qualitative descriptions were done to analyze data from the interviews. Descriptive statistics was processed to analyze quantitative data obtained through the questionnaire. Thoroughly, it was discovered that the majority of the preparatory school principals are being led by specialists in educational planning and management. However, a considerable number of schools are being led by non-professionals. The finding also stated that the majority of the respondents know that school principals were assigned as principals without the genuine acceptance of the school teachers regardless of their political point of view. They were not properly elected by the school community. However, a considerable number of schools have been led by those principals who have full professional acceptance which might let the school leadership system conducive to its overall teaching learning process. This may tell us though most of the school directors are not elected with their higher professional acceptance by the teachers, after their appointment their acceptance increases. In the study, ethical leadership system has been taken in to account in the majority of school principals in spite of some principals. And a considerable number of school principals do not have leadership training experiences which may imply that these leaders may not be professionals in educational policy and leadership. Principals’ general approach daily shown to school teachers during their work process is vital for effective school leadership system. The study has also revealed that most of the school leaders found in the sample schools are free from bad addictions except some of other schools. So we can guess that how much these principals are truly and properly leading these public pre-college/university schools as far as bad addiction is prohibited by the law of academics. A lot of teachers put their strong belief on the practice of democratic leadership style in order to have quality education system for their own school. As educators it is foolish to desire
rational decision making process and school leadership system from school principals who do not use their school’s leadership policy as guideline. Briefly, it has also been examined that democratic leadership practice can be a true prerequisite to quality education system for effective school leadership system. There is a strong relationship between educational leadership practice and quality education of one’s school. Therefore, it is safe to recommend that professional principals in the field of educational leadership and policy, or educational planning and management must be assigned to the preparatory secondary schools if we need to achieve quality education as national development goal.


Misganaw Alene*
School of Education, University of Gondar, P.O.Box 196, Gondar, Ethiopia

ABSTRACT
In recent decades, school reform efforts have recognized principals’ professional development as a key component of change and as an important link between the standards movement and student achievement. This study aimed at investigating the roles and challenges of instructional leadership in bringing about successful achievement of student learning in selected schools of North and South Gondar Administrative Zones so as to coming up with possible recommendations or locally adoptable alternatives for the observed problems. The survey method was used in the study that focuses on primary sources of data. From these sample zones, 175 teachers, 285 learners and 75 instructional leaders were samples of the study. Thus, from the total of 535 sample populations, comments and suggestion were gathered through questionnaires, interview and field observation. Data were analyzed using percentage.

The findings revealed that instructional leaders have the problem of understanding the potential gains that come from working in team and coordinating different departments toward the same end. Empowerment of subordinates and group decision making are poorly practiced at all sample schools. The solely source of schools budget is governments’ treasury so that it aggravates the scarcity of the provision required inputs. The other important component of instructional leaders to properly manage their scarce resources is the capacity of preparing and utilizing strategic plan. Though preparing strategic plan is common to most of the schools, activities are not carried out in line with its intended purpose. This is because the majority of schools’ communities do not recognize that strategic plan is the process of determining how the organization can get where it wants to go. Curriculum development and its review is one of the core responsibilities of teachers in order to maximize students’ learning so far their involvement is found to be very limited. Not only low participation in developing & revising curricula but also teachers are not
encouraged to produce additional teaching materials for their respective subjects. These and other important inputs like poorly equipped pedagogical centers, in turn contribute for the declining or deteriorating of quality of education.

It is reported that the aforementioned components and other vital ingredients for maintaining quality education are not given due attention by instructional leaders. This also results in learners who are dependent only on materials which are prepared by curricular experts who have no pertinent knowledge about the felt needs and interests of students.

In relative terms from the academic activities that are given top priorities are effective implementation of continuous assessment and follow up of TDP programs. Otherwise, the culture and practice of conducting action research in order to identify current problems with regard to teaching learning process is very much negligible. Rather school principals and the rest of instructional leaders are devoting much of their times to non-developmental tasks such as ordinary meetings which may take the greatest proportion of instructional leaders’ energy and time. The other influencing factors those affect students’ learning achievement are found to be shortage of teachers for natural sciences and text books of various subjects. Finally, parents’ participation in supporting schools and following up students’ learning is very low for the reasons that instructional leaders are disregarding such a vital role of parents. To sum up it is possible to conclude that almost all instructional leaders have little or no managerial skills and knowledge. This is because they are not given an opportunity of getting refreshment trainings in the area of educational management.

SoEA 3: Knowledge, Attitude and Behavior of Hearing Impaired Young People about Sexual and Reproductive Health Issues

Semahgn Mengistu*

School of Education, University of Gondar, P.O.Box 196, Gondar, Ethiopia

ABSTRACT

The study compared the hearing impaired and the hearing young people’s knowledge, attitude and behavior of sexual and reproductive health issues in the selected Schools of Gondar City Administration. For this purpose a total of eighty (40) hearing impaired and 40 hearing) respondents were selected. A questionnaire was used to gather information from the respondents.

The findings indicated that the mean values of the hearing impaired respondents are 17.95, 26.70, and 16.05 for knowledge, attitude and behavior scales respectively. But for the hearing group the mean values are 30.35, 46.58 and 32.10 for the three scales respectively. This shows that the knowledge, attitude and behavior of the hearing impaired young people about sexual and reproductive health issues are at low level.
The hearing impaired and the hearing respondents had statistically significant differences in their knowledge, attitude and behavior towards sexual and reproductive health issues. There was statistically significant relationship among knowledge, attitude and behavior scales in both groups. And, there were no statistically significant differences between sexes in their knowledge, attitude and behavior about sexual and reproductive health issues.

Finally mounting efforts of concerned bodies were recommended to raise the young hearing impaired people's awareness and knowledge of sexual and reproductive health issues and developing favorable attitude and thereby to avoid risk factors which lead to early pregnancy, unsafe abortion and STDs including HIV/AIDS infections.

SoEA 4: Knowledge, Attitude and Behavior of Primary School Teachers About Problem Behavior and Students who Engage in Problem Behavior in the Selected Primary Schools of North Gondar Administrative Zone

Semahegn Mengistu*
School of Education, University of Gondar, P.O.Box 196, Gondar, Ethiopia

ABSTRACT
The study assessed the primary school teachers' knowledge, attitude and behavior of problem behavior and students who engage in problem behavior in the selected Primary Schools of North Gondar Administrative Zone. Data, using a 56 item instrument were collected from 806 government primary school teachers working in North Gondar Administrative Zone first and second cycle primary schools. These teachers were selected following a multi-stage cluster sampling method. The collected data were analyzed using descriptive and inferential statistical procedures. Conclusions on the findings were drawn in accordance with the research questions which led the investigation.

The attitudes that teachers hold towards problem behavior and students who engage in them are, in general, remarkably positive. However, there is also a need to improve the attitudes of teachers as there existed a significant discrepancy between the optimum level of attitude and the obtained level of attitudes. Further, teachers who had some kind of training in special needs education had more positive attitudes towards problem behavior and those students who engage in them than those teachers who did not have any training in special needs education. This underscores the contribution of the existing special needs education teacher training in generating positive attitudes. It could also be established that teachers with more positive attitudes towards problem behavior and students who engage in them use more desirable problem behavior management techniques in the classroom.
The techniques that teachers often use to handle children with behavior problems are, on average, acceptable but not perfect. And female teachers use more desirable techniques than their male counterparts in dealing with the problem behavior of students. The overall findings of this enquiry pertaining to all the variables investigated came out to be favorable.

**SoEA 5: Barriers for School Participation of Students with Special Needs in Gondar Town City administration**

Tadesse Abera*

Department of Special Needs and Inclusive education, School of Education, University of Gondar, Peace4jesus@gmail.com, 0913245468, P.O. Box. 196, Gondar, Ethiopia

**ABSTRACT**

Sixty teachers working in eight primary schools (namely, Aste Bakafa, Felege Abiyot, Tsadiqu Yohannes, Hidar 11, Azezo General primary school, Azezo Aste Fasil, Gondar University Community School and Kebele 16/Abera Giorgis respectively) of Gondar City Administration and students with special needs in these schools were the respondents of this study. The main purpose of this study was to investigate those barriers for school participation of students with special needs in the schools of the study. And, forward feasible recommendations for concerned bodies regarding alleviating of the barriers. All the school barriers were examined through questionnaire, observation, interview and focus group discussion. Frequency, percentage and qualitative analysis were used to analyze data. Results revealed that: first, in the schools, students with special needs seem to be uninvolved in activities going on in the schools as a result of suffering from confronting with inaccessible environment. Such as, dug roads, planted electric or telephone columns left and right in the way which leads to the school, inaccessible classrooms for wheelchair and crunch usage, open channels, hill of woods and stones, inaccessible leisure places and toilet rooms. Second, teachers seem to have positive attitude towards children with special needs due to their long time experience of teaching children with special needs. Beyond this, teachers help these students in many ways (for example, make things clear outside class, give their notes, make other students without special needs to read and discuss with them and report their cases to concerned bodies for further support ). Third, students without disabilities make students with disabilities to interact, play and study with them. This seems to help students with special needs to feel at ease at school and have favorable physiological make up and friendly and interactive social life. Fourth, more than half of the students with special needs participate in clubs, but not fully in all activities of the schools mainly as explained before due to inaccessible school environment. Finally, on the basis of the study findings some recommendations were drawn on how to improve the participation of students with special needs in all pertinent activities to be undertaken in the respective schools.
SoEA 6: Research on: Challenges and Opportunities to Implement Inclusive Education

Wondwosen M*, Semahegn M., Yitayal A.
University of Gondar, School of Education, mitikuwondwosen@yahoo.com, Department of Special Needs Education

ABSTRACT
This study is conducted in order to assess the challenges and opportunities to implement inclusive education in selected primary schools of North Gondar Zone. In order to attain the objectives of the study, related literatures on international policies and concepts of inclusive education was reviewed in detail. Concerning the significance of the study it is expected that it will highlight those concerned individuals on the existing situation prevailing in connection with the problem under study and devise mechanisms for addressing the observed situation. The study used descriptive survey as a research design to explain the current trends existing in the study area. As to the samples considered for the study, because there are only two schools it appeared manageable to take them as they are. In regards to participants of the study sixty four participants, namely 8 from the school’s principals, 16 from the professional teachers in special needs, 10 students without disability and 30 students with different disabilities were involved as sample participants. These samples were taken by using systematic random sampling to give fair and equal chance of selection. With regard to data gathering instrument, questionnaire, structured interview and observation were used to collect data from the participants. The finding roughly show that even though there are some opportunities that support inclusive education it cannot be taken as a guaranty due to lack of awareness, commitment, and collaboration. And there are real challenges that hinder the full implementation of inclusive education. Generally it can be conclude that the challenges outweigh the opportunity on the full implementation of inclusive education and there should be strong collaboration among stakeholders, NGOs, and the concerned bodies in order to realize the journey towards inclusive education.

SoEA 7: Assessment on Teacher's Perception of Their School Environment: The Case of Preparatory Schools in North Gondar City Administrative Zones.

Menber Enyew, Markos Tezera and Jemberu Arega
Department of Educational Planning and Management, School of Education. University of Gondar, P.O.Box 196, Member.enyew@yahoo.com, +251 918 775080
Gondar,Ethiopia

ABSTRACT
Background: For the past thirty years there has been a great deal of research in the area of learning environments. While student perceptions are used to measure class room learning environment, teachers perceptions are usually used to measure school-level environment. The
The scope of the school environment is generally broad (Huang, 2000). School environment is considered as one of the most significant indicators for the organizational strength. It involves a teacher relationship with students, other teachers, and the principal.

Purpose: The purpose of this study is to assess the preparatory school environment and to provide some knowledge base of gender, experience, and marital status differences in school environment.

Methods: Teachers of preparatory schools in North Gondar Administrative Zone were participated in the study. 20% preparatory schools were selected randomly by lottery method. To make the sample more representatives all teachers in the selected schools were involved through comprehensive sampling technique. The researchers employed School Level Environment questionnaire which comprised of six scales, namely job satisfaction, collegiality, teacher student relations, principal leadership, teacher influence, and discipline. Each scale contains four to five items that are measured on a four point likert-type rating. The internal reliability coefficients for the six scales ranged from 0.50 to 0.87. Descriptive statistics report the means and standard deviations of school environment variables of high school teachers and multivariate analysis of variance (MANOVA) was used to test for significant differences in teachers perceived school environments by seniority, gender, and marital status.

Result: Descriptive results indicate that these teachers generally had positive perceptions of their school environment. The highest rated scale by female teachers was satisfaction, followed by Teacher-Student Relations. For both male and female teachers, the scale with the lowest rating was Discipline, followed by teacher influence. The ANOVA results reveal that there was an overall significant difference by gender in teachers’ perceptions of their school environments. There was not a significant difference in the school environment scores in the school environment factors according to the marital status of the teachers. Moreover, the result showed that there was not a significant difference in the school environment scores according to seniority of the teachers.

Conclusion: It was concluded that, teachers have a positive perception towards their school environment without difference in gender, marital status and seniority. But, teachers perceived the existence of poor discipline and less influence of teachers in decision making. This may adversely affect the teaching learning process in the schools.
SoLA 1: Ethiopia's Tax Treatment of Expatriate Academic Staff: Study of the Legal Regime and Practice in the Public Higher Education institutions

Amanuel Assefa Tekie*
School of Law, University of Gondar, amanlaw2004@gmail.com, Phone No.: +251 912 786 187, Gondar, Ethiopia

ABSTRACT

Jurisdiction to tax is one of the attributes of sovereignty of governments to impose tax on the income of both natural and legal persons. All the persons over whom the sovereign power of a state extends are objects of taxation. It is recognized by international custom that a country has the right to impose tax on the income of nonresidents that arises within its borders. Likewise, a country has the right to tax the worldwide income of its residents. Therefore, the jurisdiction to tax of a country is typically established based on (1) the domestic and foreign income of its residents and (2) the domestic income of nonresidents. Consequently, the tax legislation of a country should in succinct terms state whether and to what extent it has adopted these principles of jurisdiction-to-tax. In line with this, the FDRE has adopted both the source and residence jurisdictional principles under its income tax proclamation, No. 286/2002, which reads as:

Art. 3. Scope of Application

1) This Proclamation shall apply to residents of Ethiopia with respect to their worldwide income.

2) The Proclamation shall apply to non-residents of Ethiopia with respect to their Ethiopian source income.

As a result, this research has duly scrutinized the tax practice in the public Higher Education Institutions (hereinafter HEIs) in connection to the income of the expatriate academic staff therein vis-à-vis the legal regime (or the jurisdictional tax principles). As a general objective, the study is primarily aimed at examining the consistency of the tax laws vis-à-vis the tax practice of the public HEIs in connection to the income of the expatriate academic staff therein. The research approach taken is legal rather than economic; besides, the research type is pragmatic. To that end, the research is based on qualitative data. And, therefore, the data were collected from primary and secondary sources. The primary data were collected through an interview with concerned respondents from eight public HEIs, MoFED, ERCA, & MoE. As well, the domestic and international tax laws of the country, employment contracts of the expatriate academic staff and relevant letters written by government agencies were scrutinized. As to the secondary data, relevant published and unpublished government documents were used to harness the primary data. Finally, the researcher discovered that the public HEIs illegally grant employment income tax exemption to the expatriate academic staff therein. In effect, the researcher recommended that the illegal tax practice of the public HEIs should be corrected by the Tax Authority.
SoLA 2: The Settlement of 'Individual' and 'Collective' Labor Disputes Under Ethiopian Labor Law

Hiruy Wubie*
School of Law, University of Gondar, hiruy.wubie@gmail.com, +251918787545, Gondar, Ethiopia

ABSTRACT
The settlement of labour disputes is a precondition for a harmonious working environment. Clarity of laws governing labour relations, as well as their consistent and adequate implementation, contributes to the establishment of a dependable system of dispute settlement. Pursuant to Ethiopian labour law, labour disputes are classified as individual and collective, and a number of bodies are in charge of resolving these disputes. Yet confusion on the criteria used to draw a distinction between individual and collective labour disputes brings about major issues in terms of interpretation and implementation of relevant legal rules and judicial decisions. In this sense, this research is intended to clarify the criteria used to differentiate the individual from the collective nature of labour disputes in Ethiopian labour law, and to cast light on processes and powers assigned to the actors to seek a settlement. To this end, an analysis of the provisions laid down in the Labour Proclamation will be carried out, alongside an overview of legal opinion and the precedents set by the Cassation Division of the Federal Supreme Court. The aim here is to provide the readership – whether practitioners and the general public – with some useful insight into a neglected – yet crucial – topic of Ethiopian labour law. The article opens with an examination of the constitutional and statutory basis to settle out labour disputes in Ethiopia. It then goes on to explain the main criteria adopted to distinguish between individual and collective labour disputes, particularly by explaining the rationale for such a distinction as illustrated by the Labour Proclamation. A Section devoted to the institutions and the procedures meant to settle the two types of disputes will follow, alongside some concluding remarks which summarize the main findings of the paper.

SoLA 3: The Rights of Persons with Mental Disabilities to Access Mental Health Care and their Human Rights Conditions in Psychiatric Facilities in Ethiopia: With a particular reference to Gondar University Hospital

Megnot Tatek, School of Law, Gondar, Ethiopia

ABSTRACT
The standardization and undertakings for recognition and respect of human rights dates back to 1948 with the adoption of the Universal Declarations of Human Rights. The understanding towards the universality of human rights is reached relatively later at the third World Human Rights Conference in Vienna in 1993. Despite this, until recently, little attention has been afforded to addressing the serious human rights violations suffered by Persons with
Disabilities. In response to the long reigned neglect and the advocacy works by different caucus of the disabilities movement, in 2006, a separate convention was agreed at the UN level, the convention on the Rights of persons with disabilities, which culminated the efforts of many stakeholders to bring about a new dawn for Persons with Disabilities.

Persons with Mental Disabilities are among this group of people who are vulnerable groups and have been victims of human rights violations based on their disabilities. The grossly inadequate budget allocated to mental health compared to the burden it caused on the global burden of disease and disability evidences how these group of people are forgotten globally and at a national level. This has far reaching implications on their human rights. The institutions extending care for Persons with Mental Disabilities have been places of perpetration of various human rights violations.

In the above respect, Ethiopia is not a different country. With 15-17% of the total burden of diseases is caused by mental illness, it is seriously a concern to allocate an insignificant budget to the field. This is exacerbated due to the lack of neither any mental health law nor a policy for the protection of the rights of Persons with Mental Disabilities, either anybody to safeguard their conditions in psychiatric facilities. These people are thus suffering from various forms of human rights violations behind closed doors in addition to the lack of access to mental health services. This study is therefore an effort to show the right of PWMDs to access mental health services. Moreover, the research has also an objective of assessing the human rights conditions at the psychiatric settings in one selected facility; Gondar University hospital which is the only institution providing mental health care service in the town.

Key words: Ethiopia, human rights, mental disabilities, mental health, psychiatric facility, Gondar University Hospital
### A: Research proposals submitted and granted in the year 2011/12 and 2012/13

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B. Major Research Related Activities

I. Guidelines Prepared
VPRCS has prepared and published the following five Guideline documents:

- Research Policy and Guideline
- Knowledge and Technology Transfer Guideline
- Community Service Implementation Guideline
- Research & Innovation Fund (RIF) Guideline
- Institutional Review Board- Standard Operating Procedure (IRB- SOP)

II. Organized Workshops
VPRCS in collaboration with other faculties/Schools including the college has been organizing more than ten International and National research conferences since the year 2011/12: Their main theme was on:

- TB
- Mental Health
- Sichtomiasis
- Financial Sector
- Education Quality
- Gender and Networking HEI
- Professionalism
- 22nd Annual Conference
- Population, Reproductive Health and Economic Dev’t
- Astronomy and Adaptive Technology
- Tourism week research conference on Heritage conservation
- Inauguration of two newly research centers:
  * Climate Change
  * Social Science and Humanities
- Livestock
- Biodiversity
- 23rd Annual Research Conference
- Others
III. Research trends in UoG

Figure 1: Research Undertakings 2004/5-2012/13

Figure 2: Budget allocated for Research Undertakings 2004/5-2012/13
Figure 3: Research Ethics review progress 2007/8-2011/12

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