Online ISSN : 2249-4618
Print ISSN : 0975-5888
DOI : 10.17406/GJMRA

Global Journal of Medical Research: K

Interdisciplinary

Stress in Medical Profession

Staff Nurses of Tertiary Care

Highlights

System in Triaging Pediatric

Public Health Service Delivery

Discovering Thoughts, Inventing Future

VOLUME 19 ISSUE 2 VERSION 1.0

Global Journal of Medical Research: K
Interdisciplinary

Global Journal of Medical Research: K
Interdisciplinary

Volume 19 Issue 2 (Ver. 1.0)

Open Association of Research Society

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

Global Journals Inc.

*(A Delaware USA Incorporation with "Good Standing"; **Reg. Number: 0423089**)*

Sponsors: Open Association of Research Society
Open Scientific Standards

Publisher's Headquarters office

Global Journals® Headquarters
945th Concord Streets,
Framingham Massachusetts Pin: 01701,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
2nd, Lansdowne, Lansdowne Rd., Croydon-Surrey,
Pin: CR9 2ER, United Kingdom

Packaging & Continental Dispatching

Global Journals Pvt Ltd
E-3130 Sudama Nagar, Near Gopur Square,
Indore, M.P., Pin:452009, India

Find a correspondence nodal officer near you

To find nodal officer of your country, please email us at *local@globaljournals.org*

eContacts

Press Inquiries: *press@globaljournals.org*
Investor Inquiries: *investors@globaljournals.org*
Technical Support: *technology@globaljournals.org*
Media & Releases: *media@globaljournals.org*

Pricing (Excluding Air Parcel Charges):

Yearly Subscription (Personal & Institutional)
250 USD (B/W) & 350 USD (Color)

Editorial Board

Global Journal of Medical Research

Dr. Han-Xiang Deng

MD., Ph.D
Associate Professor and Research Department
Division of Neuromuscular Medicine
Davee Department of Neurology and Clinical Neurosciences
Northwestern University Feinberg School of Medicine
Web: neurology.northwestern.edu/faculty/deng.html

Dr. Pina C. Sanelli

Associate Professor of Radiology
Associate Professor of Public Health
Weill Cornell Medical College
Associate Attending Radiologist
NewYork-Presbyterian Hospital
MRI, MRA, CT, and CTA
Neuroradiology and Diagnostic Radiology
M.D., State University of New York at Buffalo,
School of Medicine and Biomedical Sciences
Web: weillcornell.org/pinasanelli/

Dr. Roberto Sanchez

Associate Professor
Department of Structural and Chemical Biology
Mount Sinai School of Medicine
Ph.D., The Rockefeller University
Web: mountsinai.org/

Dr. Michael R. Rudnick

M.D., FACP
Associate Professor of Medicine
Chief, Renal Electrolyte and Hypertension Division (PMC)
Penn Medicine, University of Pennsylvania
Presbyterian Medical Center, Philadelphia
Nephrology and Internal Medicine
Certified by the American Board of Internal Medicine
Web: uphs.upenn.edu/

Dr. Feng Feng

Boston University
Microbiology
72 East Concord Street R702
Duke University
United States of America

Dr. Seung-Yup Ku

M.D., Ph.D., Seoul National University Medical College,
Seoul, Korea Department of Obstetrics and Gynecology
Seoul National University Hospital, Seoul, Korea

Dr. Hrushikesh Aphale

MDS- Orthodontics and Dentofacial Orthopedics.
Fellow- World Federation of Orthodontist, USA.

Santhosh Kumar

Reader, Department of Periodontology,
Manipal University, Manipal

Gaurav Singhal

Master of Tropical Veterinary Sciences, currently pursuing Ph.D in Medicine

Dr. Aarti Garg

Bachelor of Dental Surgery (B.D.S.) M.D.S. in Pedodontics and Preventive Dentistr Pursuing Phd in Dentistry

Sabreena Safuan

Ph.D (Pathology) MSc (Molecular Pathology and Toxicology) BSc (Biomedicine)

Getahun Asebe

Veterinary medicine, Infectious diseases, Veterinary Public health, Animal Science

Dr. Suraj Agarwal

Bachelor of dental Surgery Master of dental Surgery in Oromaxillofacial Radiology.
Diploma in Forensic Science & Oodntology

Osama Alali

PhD in Orthodontics, Department of Orthodontics, School of Dentistry, University of Damascus. Damascus, Syria. 2013 Masters Degree in Orthodontics.

Prabudh Goel

MCh (Pediatric Surgery, Gold Medalist), FISPU, FICS-IS

Raouf Hajji

MD, Specialty Assistant Professor in Internal Medicine

Surekha Damineni

Ph.D with Post Doctoral in Cancer Genetics

Arundhati Biswas

MBBS, MS (General Surgery), FCPS, MCh, DNB (Neurosurgery)

Rui Pedro Pereira de Almeida

Ph.D Student in Health Sciences program, MSc in Quality Management in Healthcare Facilities

Dr. Sunanda Sharma

B.V.Sc.& AH, M.V.Sc (Animal Reproduction, Obstetrics & gynaecology), Ph.D.(Animal Reproduction, Obstetrics & gynaecology)

Shahanawaz SD

Master of Physiotherapy in Neurology PhD- Pursuing in Neuro Physiotherapy Master of Physiotherapy in Hospital Management

Dr. Shabana Naz Shah

PhD. in Pharmaceutical Chemistry

Vaishnavi V.K Vedam

Master of dental surgery oral pathology

Tariq Aziz

PhD Biotechnology in Progress

Contents of the Issue

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Novel Criteria System in Triaging Pediatric Foreign Body Aspiration: Chest Diseases Hospital Criteria

By Essa AlGhunaim, MD, Derar AlShehab, FRCSC, Rudolfo Sotis, BNS & Adel Ayed, FRCSC
Chest Diseases Hospital

Abstract- *Objectives:* Adaption of new referral criteria system for suspected pediatrics with foreign body aspiration.

Methods: Bronchoscopy reports of all patients referred to Thoracic and foregut surgery unit with suspicion of foreign body aspiration from all Kuwait hospitals during the period from July 2016 to December 2017. Excluded patients who underwent bronchoscopy procedure for diagnostic purposes. Chest diseases Hospital criteria were assigned according to present initially in the emergency room, and the assigned results were blinded from the referring physician.

Results: The patients were referred to our care with suspicious of foreign body aspiration from secondary hospitals in Kuwait, totaling 232 patients. Male were 149 patients and females were 83 patients, compromising 64% and 36% respectively. The mean age of the patients was 36.25 months. In general, 143 patients were negative study, and 89 patients were positive. Patients with CDH criteria was less than 3, 80.3% were negative, while CDH criteria from 3 to 6 the positive results were 76.1%, and when the CDH criteria were higher than 6, the positive results were 100%.

GJMR-K Classification: *NLMC Code: WW 525*

NOVELCRITERIASYSTEMINTRIAGINGPEDIATRICFOREIGNBODYASPIRATIONCHESTDISEASESHOSPITALCRITERIA

Strictly as per the compliance and regulations of:

Novel Criteria System in Triaging Pediatric Foreign Body Aspiration: Chest Diseases Hospital Criteria

Essa AlGhunaim, MD [α], Derar AlShehab, FRCSC [σ], Rudolfo Sotis, BNS [ρ] & Adel Ayed, FRCSC [ω]

Abstract- Objectives: Adaption of new referral criteria system for suspected pediatrics with foreign body aspiration.

Methods: Bronchoscopy reports of all patients referred to Thoracic and foregut surgery unit with suspicion of foreign body aspiration from all Kuwait hospitals during the period from July 2016 to December 2017. Excluded patients who underwent bronchoscopy procedure for diagnostic purposes. Chest diseases Hospital criteria were assigned according to present initially in the emergency room, and the assigned results were blinded from the referring physician.

Results: The patients were referred to our care with suspicious of foreign body aspiration from secondary hospitals in Kuwait, totaling 232 patients. Male were 149 patients and females were 83 patients, compromising 64% and 36% respectively. The mean age of the patients was 36.25 months. In general, 143 patients were negative study, and 89 patients were positive. Patients with CDH criteria was less than 3, 80.3% were negative, while CDH criteria from 3 to 6 the positive results were 76.1%, and when the CDH criteria were higher than 6, the positive results were 100%.

Conclusions: Establishing a referral criteria system for foreign body aspiration could help utilization of hospital resources and re-direct the attention more toward emergency and urgent cases. The CDH criteria system helped in providing timely intervention without jeopardizing the safety of the patient or exposing the patient to the risk of asphyxiation. CDH criteria system could be beneficial and adaptable for both high volume centers as well as rural centers which require a specialist to be present for bronchoscopy.

I. Introduction

Foreign body aspiration in the pediatric population is one of the most common presentations to the emergency rooms in Kuwait. More than 400 cases per year visit the ER with suspicion or witness aspiration accompanied by multiple other upper respiratory tract symptoms that may alarm ER physicians to investigate further if there was any history of suspicion of aspiration. Thoracic surgery team in Kuwait get the referral to examine the patient further and perform the bronchoscopy to rule in or out any foreign bodies in the airway. Our team is located in a tertiary care hospital (Chest Diseases Hospital), and we receive patients from different secondary care hospitals as well as private hospitals.

Author α σ ρ ω: Thoracic and Foregut Surgery unit, Cardaic and Thoracic Surgery Department, Chest Diseases Hospital, Kuwait.
e-mail: ealghunaim@thoracickuwait.org

Up until 2016, all referred patients would undergo urgent bronchoscopy regardless of the time of the procedure, thus requiring to call in anesthesia consultant and occupy the operating room for the procedure which is shared with Pediatric Cardiac Surgery team.

This process was found to be a burden as many cases were negative or the patient was stable enough to be referred the next morning when the whole team was available in case a further intervention required.

II. Short Review

According to the Centers for Disease Control and Prevention (CDC), an average of 57 deaths among children ages 0 to 14 years due to inhalation and ingestion of food causing obstruction of the respiratory tract occurred each year from 2001 through 2009.[1] Kuwait; unfortunately, a record was not available as there was no registry prior to July 1st, 2016.

The currently available reports show only statistics, but no criteria system was devised to create a triage system to categorized the urgency of broncho-scopy intervention.[2] Although many reports showed large numbered audit studies, no study recommended establishing a proper system for triage and categorization of the referrals.

III. The Aim of the Study

To evaluate and assess the validity of Chest Diseases Hospital (CDH) Criteria system for triaging and categorization of the patient suspected with foreign body aspiration.

IV. The Scope of the Study

To utilize the usage of the CDH criteria as a triage system to prioritize the urgency of bronchoscopy and help the utilization of hospital resources.

V. Patients and Methods

The patients were referred from secondary care general hospitals in Kuwait as well as private practice pediatrician and ear, nose, and throat doctors all over Kuwait. The patient history was conveyed over the phone to register the score upon presentation to the

referral clinic. The score was reviewed again by the on-call thoracic surgeon with the study team, and the plan of intervention was informed to the treating physician. Any patient who was referred to assess in diagnosing respiratory tract infection or any airway abnormalities were excluded from the study.

VI. Study Design

Chest disease criteria were designed according to the previous audit done from 2007 to 2016 of all bronchoscopies performed by the thoracic and foregut surgery unit in Chest Diseases Hospital. The most common presentations associated with positive findings were stratified and weighted to the frequency, they are as follow: Stridor (+3 points), History of chocking (+2 points), Desaturation (below 92%, +2 points), Radiological finding (+1 point), Decreased air entry (+1 point) and respiratory rate (above 30/min, +1 point).

CDH score less than or equal of 3; an intervention was planned to be done within 24-48 hours. If CDH score was between 4 to 6, an intervention was scheduled to be performed within 12 hours. If the score was higher than 6, it was labeled as an emergency and the second on-call was immediately informed, and the bronchoscopy was performed within 3 hours (in some cases the patient was unstable for transfer to our center, so a team would go to the referring hospital to perform bronchoscopy in that hospital).

Ethical considerations

All required approval was taken.

VII. Results

Two hundred and thirty-two patients were included in the pilot study for Chest Diseases Hospital (CDH) criteria. All of which were presented to our care with evidence or suspicion of foreign body aspiration. Male patients were 149 patients resembling 64%, on the other hand, Female patients were 83 patients and presented with 36%. Mean age of the patients was 36.75 months. Overall, 89 patient was diagnosed and confirmed to have foreign body aspiration by bronchoscopy (38.3%), and 143 patients were negative for foreign body aspiration (61.7%).

CDH scores were clumped according to urgency, a score of 3 and below presented in 158 patients. Out of those patients, negative bronchoscopy was found in 127 patients. Giving us an 80.89% of the patients with CDH of 3 and less are negative. Meanwhile, the positive study was found in 31 patients out of the 157 patients, of which the resemble 19.11% of that category.

CDH score between 4 and 6 presented in 67 patients. The positive studies were presented in 51 patients of the 67 patients, resembling 76.11%. On the other hand, the number of negative bronchoscopies for this category of patients was 16 patients (23.88%).

For CDH scores above 6, seven patients were referred to our service, and all those patients were positive with foreign body aspiration.

Presentation of data

CDH 3 and less: positive 31/232 (13.5%).

CDH 3 and less: negative 127/232 (54.1%).

CDH 4-6: positive 51/232 (22.2%).

CDH 4-6: negative 16/232 (6.9%).

CDH above 6: positive 7/232 (3%).

CDH above 6: negative 0/232 (0%).

VIII. Discussion

As the results show, the criteria were tested in controlled environment given the highest priority to the safety of the patients, and the utmost importance was not to jeopardize the health of them. We kept reminding the team that this scoring system is not to diagnose whether the patient does have a foreign body or not, but it was to decide when to do the bronchoscopy.

Since the initiation of the pilot study, the team resources were conserved in managing more urgent cases (Adult and Pediatric thoracic traumas and emergencies) during on-call duties. The anesthesia, as well as the bronchoscopy room staff, were more available when a CDH score above 6 patient was referred as they now believe it required urgent intervention knowing it was most likely to be a positive study.

The most common foreign body found was organic material (nuts, nut shells, or food) found in more than 75% of the patients with positive foreign bodies. Other foreign bodies were: needles, plastic pen caps, whistles, candies, and chocolate wrapping foil. It was found that whenever the foreign body is present in the main bronchus either right or left, in addition to the trachea, it was associated with higher scores in the criteria system. On the other hand, lower scores and positive studies were associated with foreign bodies being lodged in distal branches of the bronchus.

The study was performed with single blinding factor; we believe that a much larger population would surely validate the study more and help device it into working triaging system and be adopted by centers dealing with foreign body aspiration.

New modalities could be adopted along side of the criteria system to minimize the risk of performing bronchoscopy procedure on younger patients, such modality for example is virtual bronschoscopy (Tomography-generated virtual bronchoscopy) as it was tested on two patients and the authors recommended the performance of conventional bronchoscopy with general anesthesia can be avoided in cases when VB does not show the presence of FB in the airway.[3]

Haliloglu et al also domenstrated that when the VB result is normal, without evidence of endobronchial obstruction, the use of conventional bronchoscopy was not superior in providing relevant additional information. [4, 5]

References Références Referencias

1. Centers for Disease Control and Prevention. CDC WONDER. Underlying cause of death, 1999–2009. Available at: HTTP:// wonder.cdc.gov/. Accessed November 19, 2012.
2. Korlacki W, Korecka K, Dzielicki J. Foreign body aspiration in children: diagnostic and therapeutic role of bronchoscopy. Pediatric Surgery International. 2011; 27(8): 833-837. doi: 10.1007/s00383-011- 2874-8.
3. Veras T N1, Hornburg G, Schner A M, Pinto L A. Use of virtual bronchoscopy in children with suspected foreign body aspiration. J Bras Pneumol. 2009 Sep; 35(9): 937 41. PMID: 19820821.
4. Haliloglu M, Ciftci A O, Oto A, Gumus B, Tanyel F C, Senocak M E, et al. CT virtual bronchoscopy in the evaluation of children with suspected foreign body aspiration. Eur J Radiol. 2003; 48(2): 188-92.
5. Adaletli I, Kurugoglu S, Ulus S, Ozer H, Elicevik M, Kantarci F, et al. Utilization of low-dose multi detector CT and virtual bronchoscopy in children with suspected foreign body aspiration. Pediatr Radiol. 2007; 37(1): 33-40.

This page is intentionally left blank

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Self Rated Assessment of Stress due to Physical Environment & Job Requirements among Staff Nurses of Tertiary Care Hospital in Delhi

By Gurmeet Kaur, Priya Arora, Jyotismita Pathak, Tanu Anand & Rajesh Vaidya

Guru Gobind Singh Indraprastha University

Introduction- Stress related diseases are ubiquitous around the world and a lot of people are disabled due to stress. Stress is the psychological and physiological response to threatening and unpleasant environmental factors.(1) Occupational Stress is the result of the interaction between the individual and the work environment.(2) Occupational stress is a risk factor for depressive symptoms.(3,4) Factors such as extensive work overload, lack of autonomy, long working hours, abusive management, bad relationship with coworkers, lack of equal opportunities have been identified in stress related to workplace.(5) Factors contributing to stress at workplace include physical agents (light, sound, heat or cold), occupational factors (workload, ambiguity and job problems, changes, pressure about time saving, taking responsibility too low or too high), factors related to organizational management (lack of organizational support, structural weakness, poor management), synergistic factors (lack of solidarity, weak group support), factors associated with individual expectations (hopes and early expectations, retirement concerns), and factors outside the work environment (family life, marriage, parents, finances, friends and community relations).(6-8)

GJMR-K Classification: *NLMC Code: WB 310*

Strictly as per the compliance and regulations of:

Self Rated Assessment of Stress due to Physical Environment & Job Requirements among Staff Nurses of Tertiary Care Hospital in Delhi

Gurmeet Kaur [α], Priya Arora [σ], Jyotismita Pathak [ρ], Tanu Anand [ω] & Rajesh Vaidya [¥]

I. Introduction

Stress related diseases are ubiquitous around the world and a lot of people are disabled due to stress. Stress is the psychological and physiological response to threatening and unpleasant environmental factors.[1] Occupational Stress is the result of the interaction between the individual and the work environment.[2] Occupational stress is a risk factor for depressive symptoms.[3,4] Factors such as extensive work overload, lack of autonomy, long working hours, abusive management, bad relationship with coworkers, lack of equal opportunities have been identified in stress related to workplace.[5] Factors contributing to stress at workplace include physical agents (light, sound, heat or cold), occupational factors (workload, ambiguity and job problems, changes , pressure about time saving, taking responsibility too low or too high), factors related to organizational management (lack of organizational support, structural weakness, poor management), synergistic factors (lack of solidarity, weak group support), factors associated with individual expectations (hopes and early expectations, retirement concerns), and factors outside the work environment (family life, marriage, parents, finances, friends and community relations).[6-8]

Among various professions, nursing profession is one which gives immense satisfaction and accomplishment. But, often it can also be enormously stressful. In India the nurse to patient ratio is considerably low (1:2250) thereby overstraining of nurses often occurs.[9] There is mounting evidence that the physical work environment affects job performance, job satisfaction, employee injuries, worker behaviors, communication patterns, employee fatigue, employee error rates, and physical and psychological stress.[10] Environmental factors such as noise, air quality, light, toxic exposures, temperature, humidity, and aesthetics have been identified as possible risk factors for stress at workplace.[11] There is evidence showing nurses are adversely affected by high noise levels. Such levels have been associated with increased stress and annoyance, fatigue, emotional exhaustion, and burnout. Increased feelings of noise-related stress and burnout can lead to an increase in intention to change profession.[12] Nurses across the world are reporting such increased stress and dissatisfaction with their jobs[13] and job-related stress in the work environment being one of the principal reasons that nurses change jobs. Studies reveal that combination of environmental factors with the growing patient's demand for safety, security, competence, physical and psychological comfort are responsible behind the mounting stress levels among nurses.[14] Thus this study was planned in order to assess the stress due to physical environment & job requirements among staff nurses of a tertiary care hospital in Delhi. It will help in rationalizing the stress management initiatives towards a definite course, thereby warranting that health care givers remain healthy and stress free which will lead to efficient delivery and improved quality of health services for the population at large.

Author: *e-mail: drgurmeetkaurkumar@gmail.com*

II. Methodology

a) Study Setting and Study Participants

This was a hospital based cross-sectional study carried out among nursing personnel in a tertiary care hospital catering to a large population of Delhi and nearby states. Out of the total 2190 staff nurses and nursing sisters (junior nursing staff), 102 randomly selected nursing personnel, aged between 18 years to 60 years who were working in the hospital for at least 1 year, were free from physical disease, no history of neurological or psychiatric diseases and no drug addiction were included in the study. This sample was calculated on the basis of expected prevalence of stress among nurses, which was 60% (15), worst acceptable prevalence was taken as 50% with a 95% confidence interval. Nurses were also stratified according to their joining date in order to achieve adequate randomization. They were further randomized according to their workstation consisting of 50 beds. From each workstation, participants were selected using a random numbers' table. Informed consents were obtained before getting their personalized responses.

b) Study Tool

A pretested, self-administered, structured questionnaire was used for data collection. It included items to record socio-demographic characteristics and assess the presence of factors regarding stress among the nursing personnel. The questionnaire contained

items to assess stress due to physical environment and job requirements and its associated factors which is issued by The National Institute for Occupational Safety and Health (NIOSH).The questionnaire is a screening tool for identifying the stressors at work leading to stress. Questions to assess Stress among Nurses working in tertiary care hospitals along with their socio-demographic profile and job specifications were included based on a literature review.[16] The questionnaire was reviewed for suitability, relevance and accuracy in the Indian context. It was pretested in the English language with ten staff nurses and was suitably modified by removing 10 questions which were not relevant to objective of study and study settings. Internal consistencies of the items on Stress due to Physical Environment and job requirements were obtained through a Cronbach's alpha coefficient (0.90). The questionnaire was divided into 3 sections. The first section consisted of 4 questions pertaining to the socio demographic profile of nurses. The second section consisted of General Job Information including work experience, job title, job situation, work shift and rotation patterns and the third section consisted of 16 questions to assess for work situation associated with stress due to physical environment (Noise, lighting, temperature, humidity, air circulation and pollution) and job requirements (working fast, working hard, thinking fast, little time, workload, concentration etc).

The degree and quantification of stress due to physical environment and job requirements was assessed by a scoring system based on the 5 point 'Likert Scale' such as: 1. Rarely (Classified as No Stress); 2. Occasionally (Mild Stress); 3. Sometimes (Moderate Stress); 4. Fairly often (Severe Stress); 5. Very often (Extreme Stress). The questionnaire contained 10 possible conditions that may act as sources of stress in their day-to-day life due to physical environment and 10 possible conditions that may act as sources of stress due to job requirements and nurses were asked to grade them on a scale of 1 to 5. The scores given by each nurse to all the given stressors in their daily life were then summed up to obtain a stress score for each participant. The minimum score that could be obtained by each nurse would be 10 (10 X 1) and maximum would be 50 (10X 5). On the basis of this score, the stress in everyday life of nurse was classified as: no stress: 10, mild stress: 11 to 20, moderate stress: 21 to 30, severe stress: 31 to 40 and Extreme Stress: 41 to 50. Individual score for each stressor was also calculated by summing the score given by each nurse to a single stressor. Therefore for each stressful condition, the minimum score obtained was (1 X 102) '102' and the maximum score was (5X102) '510'. This was done to determine what sources were most significant contributors to stress in nurses' lives due to physical environment and job requirements.

c) Survey Procedure

Questionnaires were distributed to the study subjects after obtaining written informed consent. The subjects were given between 15 and 30 minutes to complete the questionnaires. The questionnaires were scrutinized at the time of collection and if any information was missing, nurses were asked again for that information to be completed.

d) Analysis

Data were entered in Microsoft Excel and transferred into SPSS version 17 for analysis. Findings were presented as group proportions, and difference in proportions for a given factor was assessed by the Chi-square test. A P value cut off for statistical significance was set at 0.05. Factors which were significantly associated ($P < 0.05$) with stress due to physical environment and job requirements in univariate analysis, were further analyzed in Binomial Logistic regression analysis. Odds Ratios (ORs) were calculated indicating the relative odds of occurrence of stress due to physical environment and job requirements due to the presence of a particular factor.

e) Ethical Issues

All nursing staff who participated in the study were informed about the purpose of the study and full free and voluntary consent was taken before their inclusion. Each nurse who participated in the study was free to withdraw from the study at any point in time and was ensured confidentiality of the responses. The study was approved by the institutional ethics committee of the medical college.

III. Results

Table 1 shows the characteristics of socio-demographic profile and job profile of nurses. Out of the total 102 nurses, 80% of nurses were females and 98% were married. The mean age of the study group was 38.52 (7.107). Mean age of nurses found with severe stress included 39.67 years. Mean work duration per week is 49.90 (7.976) hours. Mean work experience in this profession was 16.40 (5.880) years and with the present employer is 4.57 (1.680) years.

Out of the total 75.5% were full time permanent employee and 38.2% had permanent day shift. All the nurses (100%) found their jobs stressful with 57.7% reporting moderate stress while 42.1% reported severe stress.

Table 2 shows stressors of physical environment in which 80% disagreed that temperature in summers was comfortable while 72.5% disagreed that air circulation in work area was good and 54.9% disagreed that they are protected well from dangerous substances. 54.9% agreed that overall quality of physical environment was poor of their workplace while

85.3% disagreed that lighting was inadequate at their work place.

As per the stress due to job requirements shown in (Table 3), 79.4% said often their work requires marked increase in concentration while 63.7% reported they have to often work very hard. 75.5% said they have to work fast in their job quite often while 76.5% said there is often marked increase in their workload. Out of the given possible sources of stress in nurses' everyday life, 'Inability to use skills from previous experience and training' was considered the most stressful whereas 'Little time for getting things done' was the least stressful. (Table 4).

On univariate analysis (Table 5) the possible stressors associated with physical environment and job requirements include air in work area, thinking fast, temperature in winters, temperature in summers, humidity, air circulation and quality of physical environment which were all found to be statistically significant (<0.05).

To understand the co-association of various risk factors in the current occurrence of stress due to physical environment and job requirements among nurses, logistic regression analysis was done. The outcome variable was physical environment as good or bad. The Binary Logistic regression analysis using LR backward likelihood ratio showed the model was statistically significant, $p < 0.005$ consisting of factors like humidity, temperature in summer, thinking fast and quality of physical environment, temperature in winter and air circulation in work area. The model explained 41.1% (Nagelkerke R2) of the variance in stress with physical environment and correctly classified 73.5% of nurses. Among all the factors humidity, temperature in summer, thinking fast and quality of physical environment were found to be associated for stress due to physical environment which was proven with statistical significance (p value <0.01)

IV. Discussion

This study showed that majority of nurses 98% were married and 80% were females. Although there is no statistical significance, married nurses were found being more stressed than those who were unmarried. This could suggest that the additional responsibility of married life may increase their stress levels. On contrary to our findings Gelsema et al[17] noted that married nurses' experienced lower stress than unmarried nurses and female nurses experienced lower stress than men. Hence, to ascertain the association between marital status and stress further studies are required.

It was found in our study that with increasing age more nurses were stressed although increasing age and longer duration of the job did not have a statistically significant relationship with job stress. However other studies have demonstrated that increasing age and longer duration of job lead to increased stress.[18][19]

In our study 75.5% nurses agreed that they have to often work very fast which is consistent with findings of Zhou et al[20] that showed that time pressures was significantly correlated with job stress.

All the nurses reported stress in the present study. However, the very high levels of work stress was found in 57.7% nurses, which is similar to a survey conducted in 2013 among Nigerian nurses, where 56.3% of nurses reported 'high work stress'.

Other studies have also found a similar stress levels.[21], [22] No statistically significant difference was found between stress levels in this hospital, thereby suggesting that stress levels are not influenced by the type of hospital and stress management programmes should focus on nursing occupation holistically irrespective of type of setting.

The results showed a significant relationship between physical environment and job requirements on one hand and stress experienced by the nurses on the other hand. This is consistent with Shakerinia and Mohammadpour study[23] on the stressor effect of work environment on nurses who reported that more than 90% of the nurses regularly experienced stressful environment.

About half (51%) of the nurses in our study agreed noise was usually high in their work place, 40% said workplace is crowded and 54.9% nurses reported poor quality of work environment, which are consistent with findings of Montano et al. [24] and Nadri et al [25] who found that stress status of the employees was high especially when the physical environment in the workplace, such as light, noise, ventilation and chemical agents were assessed along with small work environment.

A study in 2013 on stressors of work environment of nurses showed that 93% of the respondents regularly experienced stressors at work.[26] These findings were consistent with our study. Potential capabilities of the employees must be realized and people must be assigned with a proper job in decent environment. Moreover, assigning unbearable responsibilities is not defendable. Indices introduced in the study must be controlled periodically to evaluate and determine effective managerial functions to reduce job stress.

a) Limitations of the study

One of the limitations of the study was that since stress had no objective definition or criteria; hence different subjects may have interpreted it differently. Only a limited domain of stress was determined as the goal of study was broad based and descriptive. Although stratification was done to achieve equal representation from all workstations, the sample size of 102 may not reflect the true situation. Moreover, results were based on observation over the study period, which may vary over different periods of time. The authors

firmly believe that the above limitations have not defeated the purpose of the study.

V. Conclusion

This study has provided an insight into the problem of occupational stress amongst nurses due to physical environment and job requirements and deciphered the factors responsible for the same. It has also attempted to establish a hierarchy of priority, with which the stressors operational in the nurses' life as well as occupation should be tackled in stress management programmes. This should give a proper direction and aid in designing of an efficient stress management programmes for them. These findings may go a long way in improving the mental health and stress levels of nurses and thereby enabling them to provide better patient care.

Table 1: Distribution of socio-demographic profile & job profile of subjects

Gender	Male	19.6%
	Female	80.4%
Marital status	Married	98%
	Unmarried	02%
Age	25-40 years	62.7%
	41-60 years	37.3%
Children	Less than 2	88.2%
	More than 2	9.8%
Work experience with present employer	Less than 5 years	50%
	More than 5 years	50.1%
Job title	Staff Nurse	81.3%
	Nursing sisters	18.6%
Overall work experience	Less than 20 years	76.6%
	More than 20 years	15.8%
Job situation	Permanent employee	83.3%
	Temporary employee	16.7%
Work Shift*	Permanent	67.6%
	Rotating	32.3%
Working in this shift**	Less than 2 years	31.4%
	More than 2 years	68.6%
Work duration per week	25-45 hrs	23.9%
	46-68 hrs	76.1%

* 34.3% rotated in no set pattern while 30% rotated in 8hour shift Night to evening to Day.

**27.5% agreed they changed their shift twice a week and 24.5% agreed they changed their shift more than twice a week.

Table 2: Distribution of the stressors of Physical environment at work

		N	%
The level of Noise in the area I work is usually high	True	51	50
	False	51	50
The level of Lighting in the area in which I work is usually poor	True	15	14.7
	False	87	85.3
The temperature of my work area during summer is usually comfortable	True	20	19.6
	False	82	80.4
The temperature of my work area during Winter is usually comfortable	True	77	75.5
	False	25	24.5
The Humidity in my work area is usually either too high or too low	True	48	47.1
	False	54	52.9

The level of Air Circulation in my work area is good	True	28	27.5
	False	74	72.5
The Air in which I work is clean and free of pollution	True	44	43.1
	False	58	56.9
In my job, I am well protected from exposure to Dangerous Substances	True	46	45.1
	False	56	54.9
The overall quality of the Physical Environment where I work is poor	True	56	54.9
	False	46	45.1
My work area is awefully crowded	True	40	39.2
	False	62	60.8

Table 3: Distribution of the stressors of Job requirements at work

		N	%
How often does your job require you to work very fast	Occasionally	25	24.5
	often	77	75.5
How often does your job require you to work very hard	Occasionally	37	36.3
	often	65	63.7
How often does your job leave you with little time to get things done	Occasionally	42	41.2
	often	60	58.8
How often is there a great deal to be done	Occasionally	34	33.3
	often	68	66.7
How often is there a marked increase in the work load	Occasionally	24	23.5
	often	78	76.5
How often is there a marked increase in the amount of concentration required on your job	Occasionally	21	20.6
	often	81	79.4
How often is there a marked increase in how fast you have to think	Occasionally	51	50
	often	51	50
How often does your job let you use the skills and knowledge you learned in school	Occasionally	39	38.2
	often	63	61.8
How often are you given a change to do the things you do the best	Occasionally	34	33.3
	often	68	66.7
How often can you use the skills from your previous experience and training	Occasionally	23	22.5
	often	79	77.5

Table 4: Scores for various sources of Stress due to Job requirements among Nurses

Possible job requirements leading to stress	Degree of Stress: 1=No stress and 5= Extreme stress					Total stress score for this source	Percent score of the highest stress
	1 n (%)	2 n (%)	3 n (%)	4 n (%)	5 n (%)		
How often does your job require you to work very fast?	2 (1.9)	23 (22.5)	41 (40.2)	27 (26.5)	9 (8.8)	324	63.5
How often does your job require you to work very hard?	7 (6.9)	30 (29.4)	42 (41.2)	18 (17.6)	5 (4.9)	290	56.9
How often does your job leave you with little time to get things done?	8 (7.8)	34 (33.3)	38 (37.3)	17 (16.7)	5 (4.9)	283	55.5
How often is there a great deal to be done?	13(12.7)	21(20.6)	41 (40.2)	21 (20.6)	6 (5.9)	292	57.2

How often is there a marked increase in their workload?	8 (7.8)	16 (15.7)	43 (42.2)	26 (25.5)	9 (8.8)	318	62.3
How often is their a marked increase in amount of concentration required on your job?	5 (4.9)	16 (15.7)	28 (27.5)	34 (33.3)	19 (18.6)	352	69.0
How often is their a marked increase in how fast you have to think?	18(17.6)	33 (32.4)	29 (28.4)	18 (17.6)	4 (3.9)	263	51.6
How often does your job let you use the skills and knowledge you learned in school?	12 (11.8)	27 (26.5)	34 (33.3)	23 (22.5)	6 (5.9)	290	56.9
How often are you given a change to do the things you do the best?	10 (9.8)	24 (23.5)	29 (28.4)	25 (24.5)	14 (13.7)	315	61.8
How often can you use the skills from your previous experience and training?	5 (4.9)	18 (17.6)	24 (23.5)	30 (29.4)	25 (24.5)	368	72.1

Table 5: ORs of individual factors with physical environment

Univariate Analysis			
	OR	95% CI	P value
Air in my work area	3.32	1.46-7.54	<0.05
Noise	0.85	0.39-1.86	>0.05
Temperature in summer	0.30	0.10-0.90	<0.05
Protection from Dangerous substances	1.05	0.48-2.31	>0.05
Work very fast	0.68	0.27-1.71	>0.05
work very hard	0.46	0.20-1.06	>0.05
Little time	0.88	0.40-1.94	>0.05
Great deal of work	1.00	0.43-2.28	>0.05
workload	0.93	0.37-2.34	>0.05

Bibliography

1. Leka S, Hassard J, Yanagida A. Investigating the impact of psychosocial risks and occupational stress on psychiatric hospital nurses' mental wellbeing in Japan. Journal of Psychiatric and Mental Health Nursing. 2012; 19: 123-31.
2. Clegg A. Occupational stress in nursing: a review of the literature. Journal of Nursing Management. 2001; 9: 101-6.
3. Nakata A, Haratani T, Takahashi M, et al. Job stress, social support at work, and insomnia in Japanese shift workers. Journal of Human Ergology. 2001; 30: 203-9.
4. Park S G, Min K B, Chang S J, et al. Job stress and depressive symptoms among Korean employees: the effects of culture on work. International Archives of Occupational and Environmental health. 2009; 82: 397-405.
5. Colligan T W, Higgins E M. Workplace Stress: Etiology and Consequences. Journal of Workplace Behavioral Health. 2005; 21: 89-97.
6. Opie T, Dollard M, Lenthall S, et al. Levels of occupational stress in the remote area nursing workforce. Aust J Rural Health. 2010; 18: 235-41.
7. Lambert V A, Lambert C E, Itano J, et al. Cross-cultural comparison of workplace stressors, ways of coping and demographic characteristics as predictors of physical and mental health among hospital nurses in Japan, Thailand, South Korea and the USA (Hawaii). Int J Nurs Stud. 2004; 41: 671- 84.
8. Lambert V A, Lambert C E, Ito M. Workplace stressors, ways of coping and demographic characterristics as predictors of physical and mental health of Japanese hospital nurses. Int J Nurs Stud. 2004; 41: 85-97.
9. Habibollah K S. A Study of Depression Prevalence in Nurses and It's Effect in Shiraz Namazi Hospital

Middle East Journal Of Family Medicine 2006 Jul; 4(3): 17-21.
10. Stichler J F. Healthy, healthful, and healing environments. A nursing perspective. Crit Care Nurs Q. 2009; 32(3):176–188. [Pub Med: 19542969].
11. Seifert, P C.; Hickman, DS. Enhancing patient safety in a healing environment. Top Adv Pract eJournal Medscape. Mar. 2005 serial online. Available at http://www.medscape.com/viewarticle/499690 [Accessed August 17, 2016].
12. Joseph, A.; Ulrich, R. Sound control for improved outcomes in healthcare settings. Concord, C A: The Center for Health Design; 2007. Available at http://www.healthdesign.org/research/reports/sound.php [Accessed August 31, 2016].
13. Shader K, Broome M, Broome C, West M, Nash M. Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. J Nurs Adm. 2001; 31:210–216. [Pub Med: 11324334].
14. Agency for Healthcare Research and Quality (AHRQ). The effect of health care working conditions on patient safety. Evidence Based Report/Technology Assessment. 2003. AHRQ Publication 03-E024. Available at http://www.ahrq.gov/clinic/epcsums/worksum.htm[Accessed August 17, 2016].
15. Georgia Nursing. Georgia Nurses Association staffing survey validates national survey. Aug-Oct 2011p: //www.georgianurses.org/, http://findarticles.com [Accessed on 21.9.2016].
16. NIOSH Generic Job Stress Questionnaire. National Institute for Occupational Safety and Health. Cincinnati. Available from: https://www.cdc.gov> topics>pdfs.[Last accessed on 2016 May 24].
17. Gelsema T I, van der Doef M, Maes S, Akerboom S, Verhoeven Ch. Job stress in the nursing profession: The influence of organizational and environmental conditions and job characteristics. Int J Stress Manag 2005; 12(3): 222-40.
18. Pikó B. Work-related stress among nurses: a challenge for health care institutions. The Journal of the Royal Society for the Promotion of Health 1999; 119(3): 156-62.
19. Augusto Landa J M, Lopez-Zafra E, Berrios Martos M P, Aguilar-Luzon Mdel C. The relationship between emotional intelligence, occupational stress and health in nurses: a questionnaire survey. Int J Nurs Stud. 2008; 45(6): 888-901.
20. Zhou Y, Zeng W, Hu Y, Xi Y, Tan L. The relationship among role conflict, role ambiguity, role overload and job stress of chinese middle-level cadres. Chinese Studies 2014; 3(1): 8-11.
21. Onasoga Olayinka A, Ogbebor Sarah Osamudiamen, Ojo. A. A. Occupational stress management among nurses in selected hospital in Benin city, Edo state, Nigeria. Euro. J. Exp. Bio., 2013, 3(1): 473-481.
22. Kozier, B., Erb, G., Berman, A. and Snyder, S. Fundamentals of nursing concepts, process and practice, 7th edition, Pearson Education Inc, USA. 2004.
23. Shakerinia I, Mohammadpour M. Relationship between job stress and resiliency with occupational burnout among nurses. Behbood J 2010; 14(2): 161-9.
24. Montano D, Hoven H, Siegrist J. Effects of organisational-level interventions at work on employees' health: a systematic review. BMC Public Health 2014; 14: 135.
25. Nadri F, Nadri A, Nadri F, Haidari E, Akbari H, Akbari H, et al. The job stress among tellers and its affecting factors. Journal of Health Policy and Sustainable Health 2014; 1(2): 59-63.
26. Golshiri P, Pourabdian S, Najimi A, Mosa Zadeh H, Hasheminia J. Factors effective on job stress of nurses working in emergency wards. Health Syst Res 2013; 9(1): 50-6.

This page is intentionally left blank

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Stress in Medical Profession

By Dr. Saranya Nagalingam, Annamalai Sowmiya & Dr. Balaji Arumugam

Introduction- For many years now, there has been an increased suicidal rate among medical professionals compared to the other professions. The suicides are mainly due to stress, anxiety and depression among medical professionals. A Study conducted by Dr. Balaji Arumugam et al suggested that 9.4% of participants working in Medical profession were stressed due to their occupation.[1] Despite the high prevalence of stress in doctors, and a myriad of physical and mental health consequences, doctors are notoriously reluctant to seek help for themselves.[2] Let us discuss in detail about stress factors, views about stress among medical professionals, preventive measures to control stress among medical professionals.

GJMR-K Classification: NLMC Code: WB1

STRESSINMEDICALPROFESSION

Strictly as per the compliance and regulations of:

Stress in Medical Profession

Dr. Saranya Nagalingam [α], Annamalai Sowmiya [σ] & Dr. Balaji Arumugam [ρ]

I. Introduction

For many years now, there has been an increased suicidal rate among medical professionals compared to the other professions. The suicides are mainly due to stress, anxiety and depression among medical professionals. A Study conducted by Dr. Balaji Arumugam et al suggested that 9.4% of participants working in Medical profession were stressed due to their occupation.(1) Despite the high prevalence of stress in doctors, and a myriad of physical and mental health consequences, doctors are notoriously reluctant to seek help for themselves.(2) Let us discuss in detail about stress factors, views about stress among medical professionals, preventive measures to control stress among medical professionals.

II. What is Stress?

Stress is defined as undue, inappropriate, exaggerated response to a situation. Seyle in 1965 defined stress as *"the non-specific responses of the body to any demand for change"*. This stress could either be "*Eustress*" or "*Distress*". Eustress is a positive stress which pushes a person to do his best in his work. Challenges are exciting and motivates to plan an exit strategy. But, in the other way, "Distress" prevents the person to do his work properly and makes his anxious and depressed. Threats to elicits a greater stress response from an individual. Distress is more prevalent among medical professionals.

III. Stressors

As compared to other professionals, medicos are exposed to more stressors in their professional domain. Several stress factors are as follows:

- *Long working hours:* Doctors – Decision Makers in life or death situations has to work more than 48 hours and are subjected to unrivaled physical and pscychological stressors
- *Hostile environment:* Working place in some hospitals would be quite distressing and the doctors were not able to concentrate on disease of a patient. Lack of recent advancements in a rural area would be very pathetic.
- *Harder subjects: "Doctors"* – The Journey to begin in this profession is strenuous. Medical students have to spend at least 6-8 hours daily for reading, in order to pass their subjects. On the other hand, for entering into prestigious institutes for postgraduate course, they have to study for at least 16-18 hours per day.
- *Expectation from society:* People expect a Rapid diagnosis rather than Accuracy. "Medications given by doctors should cure the disease instantly".
- *Social isolation: "It's impossible for a successful doctor to satisfy Professional and Personal Life simultaneously."* Being a Medico – who engages his life studying for years together (almost throughout the Life time), could not concentrate on social relationships. They could not attend parties, nominal family occasions and they feel like socially isolated from world.
- *Continuous Working days:* Since there are decreased numbers of doctors in government hospitals, they wouldn't get leave and they would be working for almost a year continuously. This is one of the most distressing factor.
- *Fear of future:* After completing MBBS, the medical graduates undergoes a miserable life that their Cherished dreams of becoming a doctor shatters after they understand the reality. Most of the graduates are undergoing tremendous stress and this has increased the prevalence of Suicides and suicidal tendency in this Profession.
- *Lack of training:* In developing countries like India, there is a lack of skillful training to the students even in more prestigious institutes.
- *Physical Violence:* An Alarming issue in the community, people have started harassing doctors without a proper reason. They blindly use aggressive violence against doctors without knowing the importance of the life saving procedure especially during situations like Cardiopulmonary Resuscitations.

IV. Effects of Stress

Due to these stressors, the medicos feel depressed and anxious. The long term, experiences doctor ends in a *"burn out phenomenon*" termed by Felton. This is quite common with the doctors who are having high levels of stress for longer time.

Author α: Junior Resident – Intensive Care Unit (ICU), Velammal Medical College Hospital and Research Institute, Anuppanadi Post, Madurai – 625009, Tamilnadu, India.
e-mail: dr.saranya@velammalmedicalcollege.edu.in
Author σ: CRRI - Velammal Medical College Hospital and Research Institute, Anuppanadi Post, Madurai – 625009, Tamilnadu, India.
Author ρ: Professor and HOD, Department of Community Medicine, Tagore Medical College and Hospital, Rathinamangalam, Melakottaiyur, Chennai, Tamil Nadu 600127.

Burn out Phenomenon is a triad of emotional exhaustion, depersonalization and lack of self-accomplishment. Emotional illnesses can lead to anxiety disorders, addictions, depression, eating disorders, and suicide[3,4]

'*Emotional exhaustion*' is that the person become non sensitive and they don't react emotionally to any situations. '*Depersonalization*' is the one in which the doctor visualizes the patient as just a piece of disease, not realizing that they were humans. This would probably change the doctor's attitude towards patients and there would be less productivity. '*Lack of self-accomplishment*' also occurs and it mainly associated with cynicism and the doctors were not ready to believe anyone or even their friends too.

There may be onset or increase in the usage of tobacco smoking or alcohol abuse. In order to control their stress, the physicians habituate to take some drugs, which lead to *drug addiction*.

Depression followed by stress will lead to low productivity or low performance in their work. There may increase in clinic hours in late nights without any productivity.

Prevalence of Morbidity and Mortality pattern increases in Doctors either like Myocardial Infarction in young generation due to stress or by suicides.

V. Doctor's Views about Stress

Dr. Sumit Goyal, who is an associate professor in university of Delhi, says, "Stress is very common among medical professionals. The state of Indian medicos now is really pathetic".

Dr. M. C. Gupta, who is a Medico legal Expert says," Medical professionals mainly become distressed because of their salary. If 10 years experienced medical professional gets Rs. 20000 as a salary, it would be really distressing." – Here the Experience is neglected.

VI. Prevention of Stress

Preventive measures to control stress should stay as early as the initial period curriculum. Some of the preventive measures are as follows:

- *Adequate holidays:* Adequate holidays should be given to doctors. They must be given the privilege of enjoying occasions with their family by increasing the number of doctors in each institution. Rotational duties with adequate holidays would encourage better health care system.
- *Good Salary:* Doctors are deserved to pay higher so that they need not have to toil hard for better salary for their family situations. They are not exempted from electricity bills, GST, Taxes etc, but the community expects service from them. Quality of Care can be assured for the patients.
- *Recent Advancements:* Can be invested in hospitals to make working place more comfortable the doctors should be skilled to use those instruments.
- *Entertainment:* Entertainment like music, club activities should utilize at regular intervals.
- *Exercise:* Exercise of any type like yoga, jogging, aerobics can be practiced, which keeps the mind fresh and clear.
- *Meditation:* Twice daily, meditation can be practiced to relax the mind. Meditation doesn't require special arrangements. It can be done in a working environment.
- *Counseling:* Psychotherapy can be given to a doctor who is suffering from stress and depression.

VII. Conclusion

Being a medico, perception of stress may vary from an individual to another but they are trained to perform well in a "Very stressful environment by Adopting coping strategies". All doctors possess Stress as an inseparable companion. Control of stress is much more important than their performance in their fields. When doctors ensure to balance their professional and personal life with a positive attitude then they can never be embraced with pessimism.

Prevent Stress in Life by Adopting Coping Strategies!!!

"Embracing the Right Perspective can convert Pessimistic Stress into an Optimistic Attitude"

- *Dr. Balaji Arumugam*

"Envisage the Feeling of Competency to succeed in dealing with Impediments without Consternation would be perquisite"

- *Dr. Saranya Nagalingam*

References Références Referencias

1. Balaji Arumugam, Aravind Prasad and Saranya Nagalingam. Work related stress – A major occupational health issue. International Journal of Current Research, 7, (6), 16991 – 16995.
2. Adshead G. Healing ourselves: ethical issues in the care of sick doctors. Adv Psychiatr Treat 2005 Sep; 11(5): 330-337.
3. Myers, M. Depression and anxiety. In: Goldman L S, Dickstein L, editors. The handbook of physician health. Chicago (IL): AMA Press; 2000. pp. 80-94.
4. Cromie, W J. Suicide high among female doctors. Cambridge (MA): The Harvard Gazette; 2005.

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Efficacy of Music Therapy on Prevention and Treatment of Stress and Related Disorders

By Govind Saraswati & Sonali Mohan
Centre for Advanced Research in Indian Music Therpay

Abstract- Music therapy is now a scientifically validated approach in alternate medicine and preventive healthcare. Its efficacy has been proved to effectively prevent and treat a variety of disorders. In this article we present a review on important studies that have been carried out till date on the efficacy of music therapy on stress and related disorders.

GJMR-K Classification: *NLMC Code: WM 450.5M8*

Strictly as per the compliance and regulations of:

Efficacy of Music Therapy on Prevention and Treatment of Stress and Related Disorders

Govind Saraswati [α] & Sonali Mohan [σ]

Abstract- **Music therapy is now a scientifically validated approach in alternate medicine and preventive healthcare. Its efficacy has been proved to effectively prevent and treat a variety of disorders. In this article we present a review on important studies that have been carried out till date on the efficacy of music therapy on stress and related disorders.**

I. Introduction

Stress may be the single most significant factor considered responsible for many physical and psychological problems. The effects of stress and anxiety have been widely recognized. Although stress at its optimum level can produce positive action, excess stress contributes to the development of physical ailments such as hypertension, ulcers, skin disorders, headaches, arteriosclerosis, and other life-threatening diseases. In this article, we present some of the interesting studies that have been carried out till date which scientifically validate the efficacy of music therapy on stress and related disorders.

Stress manifests as cognitive (memory problems, difficulty concentrating, poor judgement, anxious thoughts, constant worry), physical (aches, pain, diarrhoea/constipation, chest pain/rapid heartbeat, loss of sex drive, frequent colds), emotional (agitation/ unable to relax, moodiness, shot tempered/irritable, depression/unhappiness, feeling overwhelmed) and behavioural (eating more/less, sleeping too much/too little, neglecting responsibilities, using alcohol/ cigarettes, drugs, nervous habits like nail biting et) changes in any individual. The main stress hormone that modifies physical and mental functioning is cortisol.

II. Music Therapy and its Effect on Stress and Related Disorders

Relaxing music has been scientifically proven to reduce stress-induced increases in anxiety, systolic blood pressure, and heart rate in healthy males and females. Effect of relaxing music on participants' subjective and physiological response to stress was explored. Undergraduate students (43 females & 44 males) were exposed to a cognitive stressor task involving preparation for an oral presentation, either in the presence of Pachelbel's Canon in D major, or in silence. Measures of subjective anxiety, heart rate, blood pressure, cortisol, and salivary IgA were obtained during rest and after presentation of the stressor. The stressor caused significant increases in subjective anxiety, heart rate, and systolic blood pressure in male and female controls. Interestingly, these stress-induced increases were each prevented by exposure to music, and this effect was independent of gender. Music also enhanced baseline salivary IgA levels in the absence of any stress-induced effects. These findings provide experimental support for claims that music is an effective anxiolytic treatment (Knight and Rickard 2001).

Findings from clinical research suggest that music may facilitate a reduction in the stress response by decreasing anxiety levels, blood pressure and heart rate, and changes in plasma stress hormone levels. Music therapy was found to be useful in a wide range of clinical settings with patients experiencing health problems as diverse as hypertension/cardiovascular disease, migraine headaches, and gastrointestinal ulcers (Watkins 1997). Studies suggest that music therapy is an effective intervention for patients with chronic pain, children with migraine, and patients suffering from chronic tinnitus (Nickel et al 2005).

A simple blind, controlled, parallel groups, prospective randomized clinical trial was conducted to investigate the effect of music therapy on levels of intraoperative anxiety in patients undergoing crossectomy with stripping of the great saphenous vein and to assess the efficacy, safety, and feasibility of this alternative therapy as a complement of standard intraoperative care in the surgery room of Getafe University Hospital in Madrid. The study was carried out in 40 patients, 20 randomized to the experimental group and 20 randomized to the control group, with an age range from 27 to 70 years. The anxiety levels were measured by means of pre- and postsurgical questionnaires. Heart rate and systolic and diastolic blood pressures were determined during the intervention, and adrenaline and noradrenaline plasma levels were determined before and after the surgical procedure. The anxiety state and the stress feeling scale score after surgery were significantly inferior in the music therapy group.

Individuals with coronary heart disease (CHD) often suffer from severe distress putting them at greater risk for complications. Music interventions have been used to reduce anxiety and distress and improve physiological functioning in medical patients. Findings

Author α σ: CAREiMUCT (Centre for Advanced Research in Indian Music Therpay), Dwarka, New Delhi 110075.
e-mails: govindsaraswati@gmail.com, sonalimohan236@gmail.com

indicated that listening to music reduces heart rate, respiratory rate and blood pressure. Studies that included two or more music sessions led to a consistent pain-reducing effect (Bradt and Dileo 2009).

Music therapy intervention was easily implemented in the context of nursing care received during varicose vein surgery and was positively accepted and valued by the majority of the patients. It was reported that music therapy is a safe procedure that is proved to reduce anxiety and stress in the study patients (Jiménez-Jiménez 2013).

One large study found that music listening was more effective than the sedative midazolam, in reducing preoperative anxiety and equally effective in reducing physiological responses. No adverse effects were identified. It was concluded that music interventions might provide a viable alternative to sedatives and anti-anxiety drugs for reducing preoperative anxiety (Bradt et al 2013).

In a recent study, the effects of music therapy on anxiety, stress and maternal-foetal attachment in pregnant women during a transvaginal ultrasound were examined. The experimental group received general prenatal care and a single 30-minute session of music therapy, while the control group received only general prenatal care. The music therapy group showed statistically significant decrease in anxiety compared to control group but no significant difference was identified in stress and maternal-foetal attachment (Sook et al 2011).

Many patients in the surgical holding area become stressed and anxious. In a hospital, setting music reduces patients' anxiety. In this study, one group of subjects listed to music while a second group did not. Subjects who listened to music while in the surgical holding area had significantly less stress and anxiety than did those, who did not listen to music (Winter et al 1994).

Table 1: Summary of studies conducted to prove the efficacy of music therapy in stress and related disorders.

Condition	Result of the study	Reference
Migraine	Relaxation, music and imagery strengthen the right hemisphere of the brain, influencing the immune system, the ability to direct healing processes of the body, and enhancement of positive attitudes towards health and personal interactions.	Godley 1987
Migraine	In a cohort study 55 migraine patients treated with this EEG-based music therapy. 56% of the patients showed an improvement of at least 50% of their symptoms after a twelve months treatment.	Meister et al 1999
Migraine in children	Music therapy in treatment of children with migraine was successfully used.	Nickel et al 2003
Effect of music on stress hormones	Music alters constitutively expressed opiate and cytokine processes in listeners.	Stefano et al 2004
Stress induced by chemotherapy	Statistically significant improvement for the group receiving music therapy was observed on the measures of anxiety, fear, fatigue, relaxation, and diastolic blood pressure.	Ferrer 2007
Stress induced by corporate life style	Recreational music-making modulates natural killer cell activity, cytokines, and mood states in corporate employees.	Wachi et al 2007
Stress	Positive musical effects on two types of negative stressful conditions have been studied.	Yamamoto et al 2007
Depression	After 15 sessions, the music intervention group showed significant improvements in depression, anxiety, and relationships compared with the control group.	Choi et al 2008
Reduced cortisol levels during spinal anaesthesia	Listening to music during surgery in regional anaesthesia has effects on cortisol levels and reduces use of sedative requirement	Koelsch et 2011
Depression Randomized control trial	Participants receiving music therapy plus standard care showed greater improvement than those receiving standard care only in depression symptoms higher for the music therapy plus standard care group than for the standard care only group.	Erkkila et al 2011

Depression	Study suggests that music therapy partly is effective because active music-making within the therapeutic frame offers the patient opportunities for new aesthetic, physical and relational experiences.	Maratos et al 2011
Depression Controlled clinical trial	A Proof-of-Concept Study and -prospective controlled clinical trial of efficacy,	Brandes et al 2010
Depression and Anxiety in terminal cancer patients	There was significant decreasein the scores of pain in the experimental group compared who received music therapy to those in the control group. Music therapy is considered non-invasive and inexpensive intervention and can be easily applied to alleviate pain, depression and anxiety for terminally ill patients.	Hong and Cho 2010
Stress induced by elective cosmetic surgery	The Benefit of Music for the Reduction of Stress and Anxiety in Patients Undergoing Elective Cosmetic Surgery	Demarco et al 2012
Coronary heart disease	Recreational music-making alters gene expression pathways in patients with coronary heart disease	Bittman et al 2013
Effect of music to stress response	Listening music prior to a standardized stressor predominantly affected the autonomic nervous system (in terms of a faster recovery), and to a lesser degree the endocrine and psychological stress response.	Thoma et al 2013
Effect of psychobiological stress	Assessemt of music listening and psychobiological stress in daily life by noninvasively measuring salivary cortisol (as a marker of the Hypothalamic-Pituitary-Adrenal (HPA) axis) and salivary alpha-amylase (as a marker of the Autonomic Nervous System (ANS)).	Linnemanetal 2017
Stress reduction	Thirteen of 33 biomarkers tested were reported to change in response to listening to music.	Finn and Fancort 2018

III. Conclusion

Music therapy has proved to be an effective alternate therapy for combating stress and related disorders. It's a non-invasive, cost effective and efficient technique and should be encouraged to be used under the supervision of a trained music therapist for best results.

References Références Referencias

1. Knight and Rickard 2001 J Music Therapy. 38(4): 254-72.
2. Watkins 1997 Clinical Nurse Spec. 11(2): 43-50.
3. Nickel et al 2005 Ann N Y Acad Sci. 1060: 283-93.
4. Bradt and Dileo 2009 Cochrane Database Syst Rev. 15(2): CD006577.
5. Jiménez-Jiménez 2013 J VascNurs. 31(3): 101-6.
6. Bradt et al 2013 Cochrane Database Syst Rev. 6: CD006908.
7. Sook et al Asian Nursing Research. 2011 5(1): 19–27.
8. Godley 1987 Music Ther Perspect. 4(1): 24-28.
9. Meister et al 1999 Klinik and Praxis. 88(21): 946-949.
10. Nickel et al 2003 Music therapy today. (4) 4.
11. Stefano et al 2004 Med Sci Monit. 10(6): MS18-27.
12. Ferrer 2007J Music Therapy. 44 (3): 242-255.
13. Wachi et al 2007 Med Sci Monit. 13(2): CR57-70.
14. Winter et al 1994 Journal of Post Anesthesia Nursing. 9(6): 340-343.
15. Yamamoto et al 2007 Psychology of Music. 35 (2) 249-275.
16. Choi et al 2008 The Journal of Alternative and Complementary Medicine. 14(5): 567-570.
17. Koelsch e al 2011 Frontiers in Psychology 2 article 58.
18. Erkkila et al 2011 BJP. 199: 132-139.
19. Maratos et al 2011BJP. 199: 92-93.
20. Brandes et al 2010 Psychother Psychoso. M. 79: 321–322.
21. Hong and Cho 2010 J Korean Oncol Nurs. 10(1): 112-118.
22. Demarco et al 2012 Music and Medicine. 4(1): 44-48.
23. Bittman et al 2013 Med SciMonit.19: 139-147.
24. Thoma M V et al 2013 PLOS ONE 8(8).
25. Linnemann et al 2017 J vis. Exp 120.
26. Finn and Fancort 2018 Prog. Brain Res. 237: 173-200.

This page is intentionally left blank

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Effectiveness of Certificate Program on Oncology Nursing

By Capt. Usha Banerjee, Ms. Babita Sen, Ms. Ruchi Girdar & Ms. D. Maryline Flinsi

Apollo Hospitals Group

Abstract- Oncology nursing is a specialty practice. Continuing Nursing education on knowledge and clinical skills will enable the nurses to provide high-end quality care. Oncology certificate program impart training to nurse to develop knowledge and skill have on regarding chemotherapy management, care to patients receiving radiation therapy, and acquire competency in central line management, etc. One month certificate program on Oncology Nursing Center of Excellence (COE) with the title "Fight the Fight" was organized in discussion with consultants to enhance the knowledge and skill of the nurses for the specialty practice across the Apollo group. A customized tool kit was designed to serve as a guide for the COE activities of the month. Six Apollo hospital across the country who has specialized oncology unit has taken up the program simultaneously. A quasi - experimental one group pretest and posttest were done to assess the effectiveness of the program in Apollo Hospital, Delhi. The campaign enhanced the knowledge of nurses about cancer and its treatment, to improve the quality of life of patients. The study showed that there was a significant difference in the Pre-test and post-test knowledge score of the staff nurses. Therefore the certification program on oncology Nursing was found to be effective.

Keywords: *oncology, nursing, staff nurses, cancer, survivors, certificate program.*

GJMR-K Classification: *NLMC Code: W 87*

Strictly as per the compliance and regulations of:

Effectiveness of Certificate Program on Oncology Nursing

Capt. Usha Banerjee [α], Ms. Babita Sen [σ], Ms. Ruchi Girdar [ρ] & Ms. D. Maryline Flinsi [ω]

Abstract- Oncology nursing is a specialty practice. Continuing Nursing education on knowledge and clinical skills will enable the nurses to provide high-end quality care. Oncology certificate program impart training to nurse to develop knowledge and skill have on regarding chemotherapy management, care to patients receiving radiation therapy, and acquire competency in central line management, etc. One month certificate program on Oncology Nursing Center of Excellence (COE) with the title "Fight the Fight" was organized in discussion with consultants to enhance the knowledge and skill of the nurses for the specialty practice across the Apollo group. A customized tool kit was designed to serve as a guide for the COE activities of the month. Six Apollo hospital across the country who has specialized oncology unit has taken up the program simultaneously. A quasi - experimental one group pretest and posttest were done to assess the effectiveness of the program in Apollo Hospital, Delhi. The campaign enhanced the knowledge of nurses about cancer and its treatment, to improve the quality of life of patients. The study showed that there was a significant difference in the Pre-test and post-test knowledge score of the staff nurses. Therefore the certification program on oncology Nursing was found to be effective.

Keywords: oncology, nursing, staff nurses, cancer, survivors, certificate program.

I. Introduction

The nursing profession is unique among the health care professions and has the potential capacity to implement wide-reaching changes in the health care system. Nursing is the largest workforce in the health care segment and has an immense need of well- trained nurses who are not only technically sound but also specialized in various fields and abreast with the latest health care technologies

Nursing is one of the professions that is evolving rapidly. Lifelong learning is inevitable in the nursing profession. Nursing knowledge gets transformed through research evidence and the incorporation of theory in to nursing practice. Nursing research utilization of nursing process hones the clinical nursing practice. Evidence based nursing interventions focus on influencing the health status and quality of life of the cancer patients. Nursing continuing education create an opportunity for nurses to learn and advance their techniques in safe patient care. Nurses attain the ability to deliver quality nursing care through education incorporated with clinical experience. Moreover on job training and education is also considered as an imperative strategy for the retention of nurses.

Center of excellence campaign on Oncology Nursing was conducted in September 2018 as a part of clinical differentiation, a lever of Annual operating plan. Oncology nursing is a specialty practice. The training has focused on the knowledge and practice of providing care to cancer patient. Continuing nursing education on knowledge and clinical skills will enable the nurses to provide high end quality care. The educational program impart training to nurse to develop knowledge and skill have on regarding chemotherapy management, care to patients receiving radiation therapy, and acquire competency in central line management, etc.

II. Materials and Methods

a) Research approach

The study was conducted using quantitative research approach.

b) Research design

Quasi - experimental one group pretest-posttest research design.

c) Research setting

In September 2018 the study was conducted in Indraprastha Apollo Hospital New Delhi.

d) Sample and sampling technique

The sample size is 40. Convenient sampling technique was used to select staff only from the units where oncology patient are treated.

e) Tool

The knowledge of the staff nurses before and after the certificate program was assessed with structured knowledge questionnaire.

One month certificate program was designed for Oncology Nursing Center of Excellence in discussion with consultants to enhance the knowledge and skill of the nurses for the specialty practice across the Apollo group. The theme of the program is "Fight the fight". A customized tool kit was designed to serve as a guide for the COE activities of the month. Eminent consultants of the oncology department and HODs of dietary and radiation department has taken classes. Health care

Author α: Group Director Nursing, Apollo Hospitals Group. e-mail: usha_b@apollohopitalsdelhi.com

Author σ ρ: Nursing Supervisor, Indraprastha Apollo Hospital, New Delhi-76. e-mails: babita_sen@apollohospitalsdelhi.com, ruchi_g@apollohospitalsdelhi.com

Author ω: Principal, Apollo School of Nursing, Indraprastha Apollo Hospital, New Delhi-76. e-mail: maryline_f@apollodelhi.com

company personnel were also involved in special training of Ostomy care and biomedical equipment management.

CALENDAR FOR ACTIVITIES

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	1
2	3	4	5	6	7	8
			Opening ceremony & Pre-test (Oncology Nursing)	Common Cancers in India & Cancers we see at Apollo (An awareness)	Medication management	Extravasation & its management
9	10	11	12	13	14	15
	Care of Thalassemic patients (Handling of Blood & Blood products)	Pre & post operative management of Cancer patients	Case presentation on common cancers	Panel discussion on BMT	Activity /Investigations & Diagnosis (Lab, Radiology etc)	Workstation on colostomy care
16	17	18	19	20	21	22
	Case study	We know, food matters Importance of diet for Onco patients	Radiation Oncology	Biomedical equipment	Activity / Lines & drains	Camp/ Ca Breast screening
23	24	25	26	27	28	29
	Role of a Nurse in OT during Oncology surgery	Common mistakes Nurses make	End of life care & Palliative management	Survivor's Meet and Motivational Speaker	Caring for the care giver (Activity for staff)	Closing ceremony & Post test
30	1	2	3	4	5	6

Fig. 1: Showing oncology nursing toolkit of activities

The implementation details regarding the classes and activities are as follows:

- *Opening Ceremony:* The Oncology COE started with an opening ceremony. Oncology Doctors/ Unit Head/ HOD's/ Nurses from relevant areas/ Nursing leadership team were invited .The calendar of activities of the month was showcased. Pre-test was conducted to all the participants.
- *Awareness about Common cancers in India and Apollo Hospital:* The session covered Cancer Statistics in the country, their geographical distribution, age groups, Contributing factors, Traditions, taboos, cultural beliefs, early detection and Common cancers seen at Apollo in the last three years and some success stories.
- *Investigations & Diagnosis (Lab., Radiology etc.):* The speaker discussed in detail regarding Images & Biopsy reports interpretations and recent advances in diagnostic tools.
- *Medication Management:* Chemotherapy drugs their preparation, administration, monitoring and disposal and recognition of ADRs their management safety & custody of high - cost medications.
- *Care of invasive lines:* Management of Chemo port, PICC line, and normal peripheral lines care of extravasation and its prévention.
- *Care of Thalassemia patients:* Thalassemia and its treatment. Administration and management of blood and blood products.
- *Pre & post-operative management of Cancer patients:* The Focus was given on common surgical intervention and dos and don'ts in the care of the post-operative patients including home care was taught to the nurses .Observational Visit to the operation theatre was arranged for the nurses from the wards.
- *Case presentation on common cancers:* The participants discussed the common cancers in their unit.
- *Panel discussion on BMT:* A panel of nurses working in Bone marrow transplant along with their consultants has done a discussion on types of BMT, Infection control, care of patients with bone marrow transplant and health education about home care and management.
- *Food the way you want (Activity):* It is exclusively for pediatric patients. With the consent of the consultant the favourite meal of the children was provided with the help of food and beverage department.
- *Workstation on colostomy care:* Companies like Coloplast & Hollister took classes for nurses about stoma care and gave hands -on training for nurses in work stations.
- *The Case study on the top two complicated surgeries:* Oncology surgeons have discussed the top two complicated surgeries of their unit like Commando surgery, Whipple's surgery, etc.

- *Importance of diet for onco patients (Dietary department):* The Chief dietician or Dietary HODs have taken the class on the importance of dietary management for cancer patients and also about the foods that prevent cancer.
- *Radiation Oncology:* Radiation safety officers/ radiation oncologists have explained all modalities, care of the patient receiving radiation and Radiation safety program .Visits were arranged to the radiation department.
- *Biomedical equipment:* Biomedical engineers of the company like Baxter, Fresenius took sessions on the common equipment used and focus was given on trouble shooting and highlight was given on patients who go home with pumps.
- *Engage with pediatric group:* A fun event was organized exclusively for the pediatric patients like a poster, poem writing, drawing, coloring, magic shows, etc. Gifts were given as a token of appreciation for all the children who participated. The posters were displayed in the notice board in the ward and prominent places as advised by the management.
- *Health Camp:* The participants along with the help of the marketing department have organized health camps for screening and created awareness about cancer.
- *Role of a Nurse in OT during Oncology surgery:* The observational visit to the operation theatre for thenurses form wards and classes on instrume-ntation, preparation, complications during surgery & its readiness and pre & post- op care.
- *Common mistakes Nurses make:* The incidences, common complaints that consultants make and feedback from quality team, nursing leaders and staff nurses of the last one year was analysed. Based on the analysis report the importance of error reporting and ways to prevent the errors were discussed by the consultants.
- *End of life care & Palliative management:* The pain management team along with the social workers has taken classes on Palliative care of the cancer patients and End of life care.

  Cancer survivor's meet: The department have arranged a meeting for the cancer survivors with the support of their consultants and marketing team and invited motivational speakers to address the patients and their care givers.
- *Caring for the care giver:* To replenish the positive energy among the nurses a sessions like ZUMBA, aerobics, Yoga were arranged for the participants.

  Post test: All the participants were made to write the post - test
- *Closing ceremony:* All the units have organized a closing ceremony and felicitated the participants with certificates and the participants who scored highest in pre& post-test were given a token of appreciation.

III. Results

The pretest and post score was analyzed to assess the effectiveness of the certificate programme.

Table 1: Frequency Percentage distribution of the knowledge score of the staff nurses before and after the program N=40

S/No.	Knowledge score	Pretest		Post test	
		Frequency	Percentage	Frequency	Percentage
1.	Poor Knowledge [0-16]	2	5%	0	0
2.	Average Knowledge [17-32]	38	95%	14	35%
3.	Good Knowledge [18-50]	0	0	26	65%

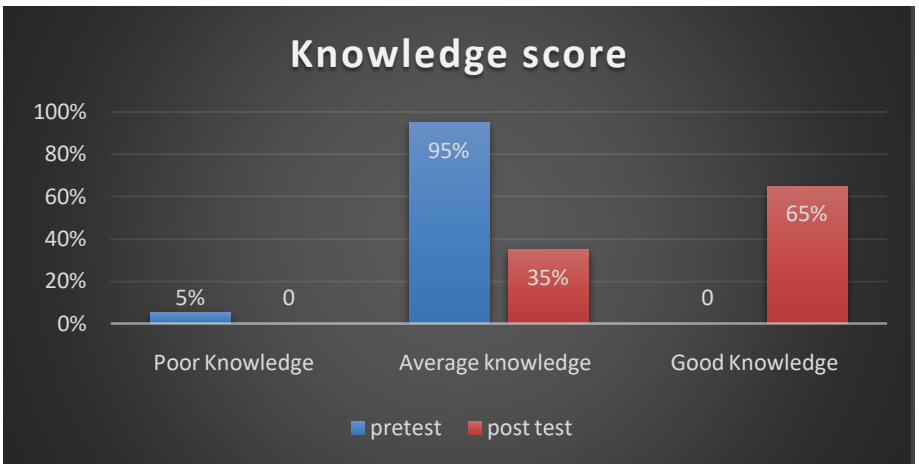


Fig. 2: Shows the percentage distribution of the increase in knowledge score after the certificate program

Table 2: Effectiveness of the structured teaching program ['t' test]

Item	Mean	Standard deviation	Mean difference	Standard error of mean difference	"t" test
Pre test	23.5	4.16	10.15	1.36	7.46
Post test	33.65	7.6			

The calculated't' value 7.46 is more than the table value 1.990 at df 78 reveals that the mean difference between the pretest and posttest score is significant at 0.05 level of significance and not by chance .So the one month certification program on oncology nursing was effective in increasing the knowledge of the staff nurses.

IV. Conclusion

The campaign enhanced the knowledge of nurses about cancer and its treatment, to improve the quality of life of patients. It enhanced the competency of nurses for providing better nursing care to the patients.The nurses gained knowledge about cancer, risk factors, screening, and the importance of early diagnosis. An awareness was created among the nursing staff about Palliative care, Pain management for ONCO patients, Handling of invasive lines, infection control practices, Handling of biomedical equipment. There was a significant improvement in the knowledge of nurses on chemotherapeutic drugs its administration and complications. Nurses gained more insight in to the radiation oncology procedures and side effects. Nurses gained a better understanding of the fears and barriers faced by people when talking about cancer. Nurses were able to confidently communicate and promote cancer awareness; highlighting key messages clearly and appropriately. They were able to guide people to relevant health and information services. They were empowered to include cancer awareness conversations in their role and made difference in their clinical areas. The nurses were able to impact of lifestyle on cancer risk and able to encourage people to make healthy lifestyle changes.

References Références Referencias

1. https://stemaboutnursingcourse.wordpress.com
2. https://www.canoacio.ca/page/OncologyNursingRoles

Global Journal of Medical Research: K
Interdisciplinary
Volume 19 Issue 2 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Public Health Service Delivery in a Decentralized System: A Qualitative Study of the Perception of Health Providers and Community Members in Gida Ayana *Woreda*, Western Ethiopia

By Habtamu Tolera, Tegegne Gebre-Egziabher & Helmut Kloos
Addis Ababa University

Abstract- Some policy-makers believe a decentralized health system enhances service delivery by improving authority, autonomy, accountability, and community participation at the local level. Evidence on the extent to which these benefits have been realized and whether there are gaps in service delivery is essential for policy designs and system reinforcing strategies. The study gathered data through 29 interviews with service providers and policy-makers and eight FGDs with residents and analyzed it for themes. The results showed several benefits of the decentralization system program that includes increased autonomy over staff planning, budgeting, appointments; increased participation in service boards, in cash and kinds. The findings also revealed several challenges that hinder the effective functioning of decentralization including lack of authority to recruit staff, interference in the appointment, transfer of cases, procurement; limited decision making power over local revenue resources; lack of community responsibility in service planning and monitoring.

Keywords: *decentralized health service, Ethiopia, authority, autonomy, effects of decentralization.*

GJMR-K Classification: *NLMC Code: W 84*

Public Health Service Delivery in a Decentralized System: A Qualitative Study of the Perception of Health Providers and Community Members in Gida Ayana *Woreda*, Western Ethiopia

Habtamu Tolera [α], Tegegne Gebre-Egziabher [σ] & Helmut Kloos [ρ]

Abstract- Some policy-makers believe a decentralized health system enhances service delivery by improving authority, autonomy, accountability, and community participation at the local level. Evidence on the extent to which these benefits have been realized and whether there are gaps in service delivery is essential for policy designs and system reinforcing strategies. The study gathered data through 29 interviews with service providers and policy-makers and eight FGDs with residents and analyzed it for themes. The results showed several benefits of the decentralization system program that includes increased autonomy over staff planning, budgeting, appointments; increased participation in service boards, in cash and kinds. The findings also revealed several challenges that hinder the effective functioning of decentralization including lack of authority to recruit staff, interference in the appointment, transfer of cases, procurement; limited decision making power over local revenue resources; lack of community responsibility in service planning and monitoring. Although the designing of decentralized health program was appropriate in earnest, critical elements for attaining adequate decentralization are still lacking. The region has still played the biggest role in staff recruitment, resource transfer, planning/ programming. These deficiencies have resulted in inadequate information, nominal service monitoring, and low quality of services outcomes. Better quality of service delivery necessitates financial independence and significant service monitoring.

Keywords: decentralized health service, Ethiopia, authority, autonomy, effects of decentralization.

I. Background

Calls for health system decentralization dated back to the Alma Ata Declaration (Beard & Redmond, 1979) and became more urgent during the 1990s (Mehrotra, 2006). Conceptually, decentralization in the context of health services entails the transfer of administrative authority to lower offices accountable to the centre (Rondinelli et al., 1989). Mills (1990) described decentralization as a process of offering routine managerial authority to semi-autonomous health facility boards reporting to politicians and decentralization is the move of power and structures for health from the central government to the local government answerable to electorates (Smith, 1997) and according to Hutchinson (1999) it is a shift of public health to private providers.

Local authority and autonomy overcome the disadvantages of centralized institutional and spatially distant bureaucracies; minimize costs, increase responsiveness to local needs; improve community involvement; and ensure accountability of local politicians, health managers, planners, and decision makers (Tang & Bloom, 2000; Rifkin, 2014). Several health sector reforms recommend citizen participation to ensure local accountability of health program management for granting adequate service delivery, monitoring the allocation and utilization of monies for health services, and developing and monitoring programs that permit them to voice their rights (Molina, 2017).

Some of studies have emphasized the need for local institutional authority, autonomy, participation, and accountability for effective implementation and improvements of health services outcomes (Mill,1990; Murthy & Klugman, 2004; Menon, 2006). However, evidence drawn from 10 countries indicates that decentralization of public systems, including health systems, has increased only slightly in Africa recently, with few achievements in the areas of autonomy, accountability, and capacity in service delivery (Wunsch, 2014). Many healthcare professionals have raised that only a few of the policy designs and systems, in practice, reinforce strategies for health that use authority, autonomy, participation, and accountability as basic guidelines for effective health policy programs (Mill,1990; Murthy & Klugman, 2004). Some studies also report a lack of effort to systematically examine this situation even though these aspects are essential for the implementation of decentralized public health services (Kassa & Shawel, 2013; Kwamie et al., 2015).

Correspondence Author α: Department of Geography and Environmental Studies, Wollega University, P.O. Box 395, Nekemte, Ethiopia.
e-mail: habtol@yahoo.com
Author α: Department of Geography and Environmental Studies, Addis Ababa University, P.O. Box 1176, Addis Ababa, Ethiopia.
e-mail: tegegneg@yahoo.com
Author ρ: Department of Epidemiology and Biostatistics, University of California, P. O. Box 0560, San Francisco, USA.
e-mail: helmutk@comcast.net

Before 1991, Ethiopia was a centralized country with a unitary form of authoritarian government. The government made decisions at the center in the absence of formally established sub-national governments accountable to the needs of local communities (Gebre-Egzhiabher, 2014). The unitary government channeled decisions on production and distribution of public health services from the capital, Addis Ababa, without actual authority, autonomy, accountability, or participation at the lower levels (Kloos, 1998; Fiseha, 2007).

With the introduction of decentralization following the downfall of the authoritarian military regime in 1991, the sub-national governments gained status in the country (Gebre-Egzhiabher, 2014). As a result, the reform transferred power to the regions and *woredas* (district) as part of a broader process of political and economic reform in two waves (Dickovick & Gebre-Egziabher, 2014). In the early 1990s, the country implemented the first wave, or regional decentralization. The program divided Ethiopia into nine regional state structures (The Federal Democratic Republic of Ethiopia, 1995). This considerably devolved power, authority, functions, and resources to the sub-national governments. In 2002, Ethiopia implemented the second wave, or *woreda* (district) decentralization program. This reform further deepened decision-making power, authority, and resource transfer from the regions to *woredas* (district) governments for service delivery (Dickovick & Gebre-Egziabher, 2014).

Public health service delivery functions were among the most crucial service areas devolved by the program to regional and *woreda* levels (Wamai, 2009). However, decentralization studies in Ethiopia often ignored the possible effects of decentralized reform on health service delivery (Kassa & Shawel, 2013). Studies have revealed that inadequate local authority and autonomy over resources, poor accountability, and insufficient local participation have inhibited effective health delivery outcomes (Kassa & Shawel, 2013; Kassa, 2015; Kilewo & Frumence, 2015; Pundhi & Boke, 2015; Regmi et al., 2017). There is a need to explore the details of the *woreda* decentralization to understand the extent to which the decentralization program shaped local healthcare delivery system and outcomes (Wamai, 2009; Kassa & Shawel, 2013; Lee, 2015).

The aim of this paper was to find the views and perceptions of participants regarding whether the decentralized public health system has improved health service delivery and management at the community level in four sub-districts or *kebeles* (the lowest government structure in Ethiopia) of Gida Ayana *Woreda*. The study provides baseline data about the health sector reform implementation and the health status of the study groups. Moreover, it adds to the existing evidence about some impediments to health service delivery reform and some of the outcomes. Lastly, the results of this study call for policy-makers to revisit decentralized health programs to ensure that *woreda* government structures have adequate authority, autonomy, resources, accountability, and popular participation in the implementation, management and provision of quality health care services.

II. Methods

a) Study approach

This qualitative research used a naturalist approach, which tries to understand phenomena in context-specific settings and gives insights of participants' experiences of the world (Frumence et al., 2013; Tong et al., 2018). The qualitative approach was considered suitable because it can elucidate the experiences of those who are directly dealing with the planning and implementation of healthcare reforms as well of community users (Kwamie et al., 2015; Abayneh et al., 2017). Our study focuses on intermediate outcomes of decentralization, such as local authority, autonomy, accountability, and participation, in a case study of Gida Ayana *Woreda*.

b) Study setting

We conducted the study in the Oromia Region, Gida Ayana *woreda* (Figure 1), western Ethiopia. The study purposively selected Gida Ayana because it is one of the *woredas* of the Oromia Region that, according to the Zonal Assessment Report, has low performance in health facilities compared to other *woredas* in the Eastern Wollega Zone (The Oromia Health Bureau [OHB], 2015). However, different civil societies and local organizations supported the *woreda* during the implementation of the decentralization process (OHB, 2015). With 140,484 people in 2013, Gida Ayana is also one of the most populous *woredas* in the Oromia Region (Central Statistical Agency of Ethiopia [CSA], 2013). Because of its size and other characteristics, the *woreda* can provide evidence as to whether decentralization has resulted in improved health services delivery.

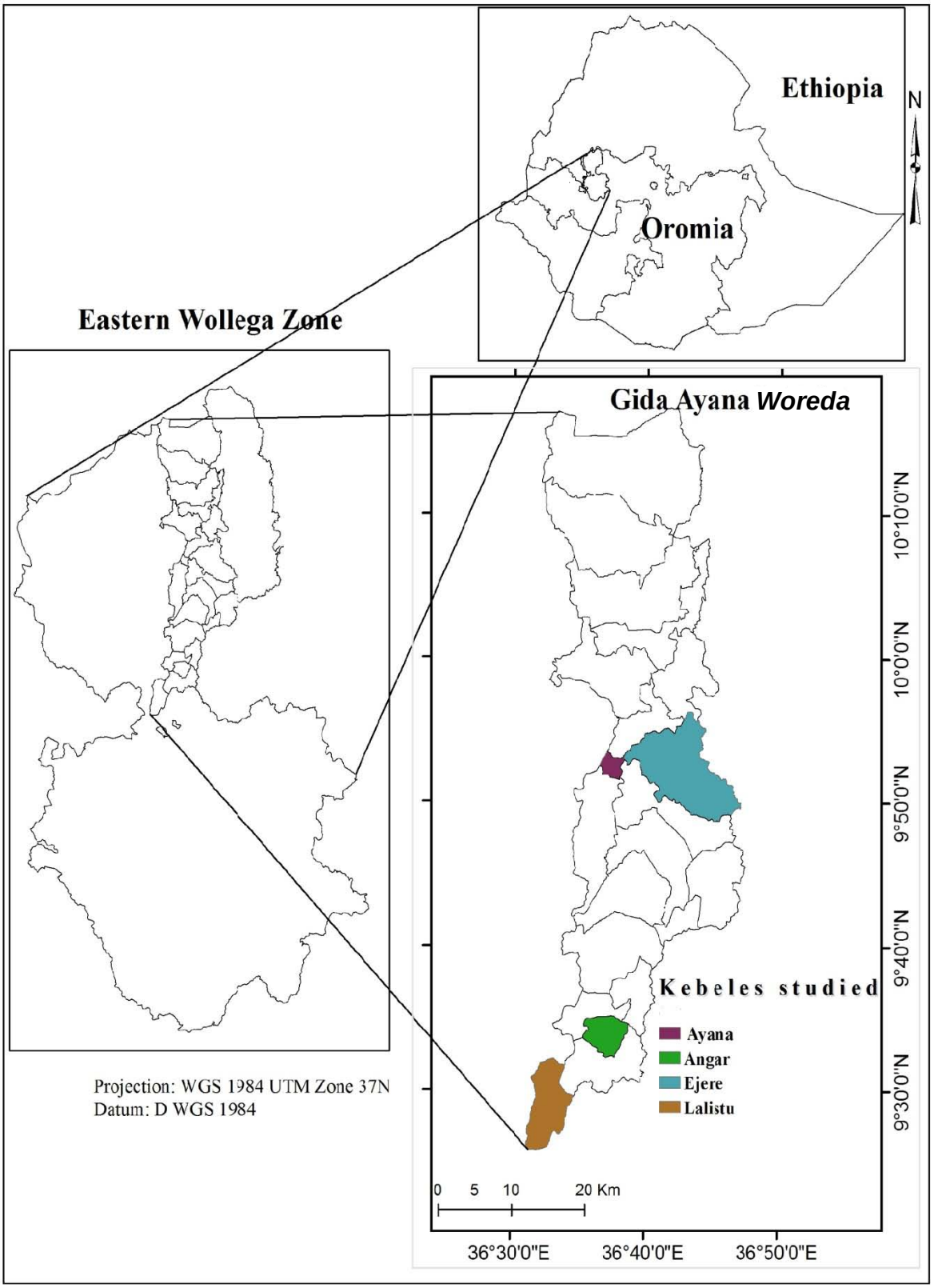


Figure 1: Study area

c) Participants

The study categorized the participants into three groups: local service providers, policy makers, and community members. We held a total of eight focus group discussions (FGD) with community member participants among four random *kebeles*: Ayana, Ejere, Angar, and Lalistu. The study purposively identified male and female community members representing different

socioeconomic, sex, and age groups to capture their experiences with the health service delivery system and quality in the *woreda*. The interviewers placed women and men participants in separate FGDs.

We conducted a total of 29 in-depth interviews or IDIs (Table 1) with local service providers and higher-level policy-makers. Data collection involved local service providers who are delivering health services at the *woreda* level. It included service providers because they had experienced people in the implementation, management, and delivery of the decentralized health care reform (Abayneh et al., 2017). The interviewees consisted of participants from the *woreda* health office (WHO) (n=6), facility heads (FH) (n=7) from the study *kebeles*, and service board members (SB) (n=12). We use purposive sampling to chosen local service providers based on information from local officials. Policy-makers (PM) (n=4) were those involving in policy, planning, and service development at both national and regional levels and the study also purposively chosen them by their work experience in public health policy-making and their knowledge of the subject matter (Tong et al., 2018).

Table 1: Demographic Characteristics of Participants Interviewed

Characteristic	*n* (%)
Local service providers	
Woreda health officials	6 (20.7)
Facility heads	7 (24.1)
Service board members	12 (41.4)
Higher level policy-makers	4 (13.8)
Work experience (years)	
5-10	17 (58.6)
11 or more	12 (41.4)
Gender	
Male	22 (75.9)
Female	7 (24.1)
Educational level	
Diploma or certificate	4 (13.8)
First degree	17 (58.6)
Second degree or higher	8 (27.6)

d) Data collection

In-depth interviews and FGDs were the primary data collection methods. In all, the study conducted 29 face-to-face IDIs and eight FGDs to gather data. We completed four FGDs with men community groups and four with women groups. The study conducted data collection between January and June 2017. The authors prepared a topic guide for the interviews and FGDs by a literature review (Yin, 2003; Tong et al., 2018). The guide explored participants' experience with and perceptions of the *woreda's* authority, autonomy, accountability, and community participation and awareness in health planning; roles and responsibilities of the *woreda* government in service delivery and management; and effects of the reform on local health care. The study piloted the questions with three officials and one FGD to establish face validity (Tong et al., 2018). Two senior staff of a local university who had previous experience in data collection with other research projects in the same *woreda* and the corresponding author undertook data collection.

The study run each in-depth interview in the interviewee's working office and all FGDs at *kebele* halls. The FGD group consisted of 8-12 participants. On average, each discussion with stakeholder participants lasted between 60 and 90 minutes. The interviewers used a local language, Afan Oromo, in the data collection with the local service providers and the English language with policy-makers. Data collectors informed participants about the objective of the study before they started data collection. They approached the community participants, initially by local administrators. Interviewers also obtained verbal consent and also told the participants to decline the interview at any stage if they wish to do so. To protect the anonymity of participants, the study used only pseudonyms in the analysis and presentation of data. Data collection consistently employed probing approach during interviews. The study sound recorded all interviews, and discussions and took handwritten field notes.

e) Data validity and reliability

The study pretested the instrument in an adjacent *woreda* to ensure reliability, to check for clarity and comprehension. After the pre-test, the corresponding author revised some interview questions. Data collectors validated frequently transcribed data by participants' feedback immediately after each interview and FGD. The interviewers adjusted fundamental inputs where necessary, and they carefully compared emerging themes alongside the data to ensure the validity of the data. This enabled the authors to manage deviant cases in their analysis.

f) Data analysis

The study had interviews and FGDs transcribed verbatim and the transcriptions used for analysis. The corresponding author crosschecked audio files and transcripts for accuracy before coding and analyzed the data systematically. The researchers read and re-read the transcripts, ensuring a clear understanding of the content (Tong et al., 2018), and used the thematic framework approach deductively, based on the topic guide, and the conceptual framework, and inductively by subthemes or quotes emerging from the data.

III. Conceptual Framework

Autonomy, authority, accountability, and participation are intermediate results of decentralization, not the end result (United States Agency for International Development, 2009; Wunsch, 2014). Achieving these

results ensures service quality and measures the improvement of health coverage, quality, and availability of medical supplies, and quality of decision and services obtained from skilled providers (Kassa & Shawel, 2013). Our paper investigates whether these intermediate outcomes achieved in the study area and whether they have resulted in service improvement (Figure 2).

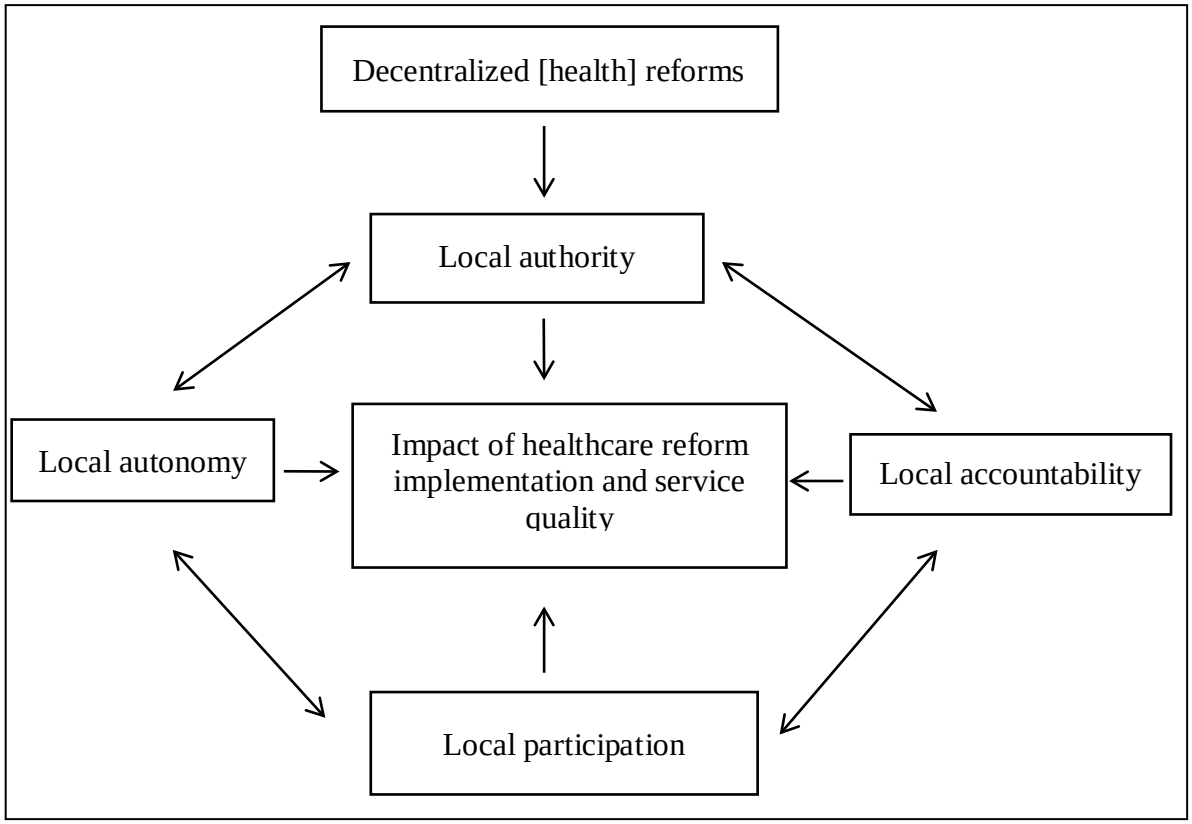


Figure 2: A conceptual framework for the study of decentralized healthcare delivery (adapted from USAID, 2009).

IV. Results

a) Background characteristics of study participants

Table 1 shows the socio-demographic background characteristics of the interview participants. Of the 29 individuals participating in the interviews, 6 (20.7%) worked at the *woreda* health office, 7 (24.1%) were facility heads, 12 (41.4%) were service board members, and 4 (13.8%) were regional and federal level policymakers. The majority (75.9%) were male; 58.6 percent had 5 to 10 years of work experience. The four men and four women FGDs each had 8-12 members.

The study cited the responses of several of the study participants in this section and identified them by letter and number code. Those designated WHO were from the *woreda* health office, those designated SB were service board members, and those designated FH were facility heads. The IDI in the code indicates the information came from an in-depth interview; the FGD denotes information from a focus group discussion.

b) Authority

The decentralization system in Ethiopia established three constitutionally recognized tiers of government: federal, regional and *woreda*. In the health sector, the Federal Ministry of Health and the Oromia Region Health Bureaus are policy-making and regulatory institutions (Ethiopia Health Sector Development Program, 2006). Zonal Health Departments in Oromia are a conduit between the region and *woredas*; they provide support and channel information to both structures (Oromia Regional State [ORS], 2001).

The regional constitution gives *woreda* governments legal authority to prepare, approve, and implement their development plans; monitor their implementation; set and collect certain taxes and service fees; and manage local resources (ORS, 2002). *Woreda* decentralization program also charged *woreda* governments with the accountability for service delivery and engaging local communities (ORS, 2005). Legally, *woreda* health offices are responsible to performing the following functions (ORS, 2014): develop and implement health plans; administer facilities; provide reproductive health, family planning, vaccination, and sanitation services; control communicable diseases and quality of healthcare; promote health education and information and community participation; undertake procurements and implement civil service programs; control resources; monitor and evaluate service performance;

manage complaints; and ensure the implementation of policies, proclamations, and directives (ORS, 2013). Health center and hospital service boards were delegated authority to govern the facilities (ORS, 2005).

The above indicates that the *woreda* government and the *woreda* health office have significant authority under the decentralized system to govern the health system. However, the extent to which these decentralized institutions fully exercised the decision making power bestowed on them is a critical issue because legal authority by itself may not imply full power and ability to discharge responsibilities. The next section, on autonomy, elaborates on this issue by identifying some critical areas of engagement.

c) Autonomy

In this section, we explore Gida Ayana *Woreda*'s administrative and fiscal decision-making autonomy organized around themes that emerged during analysis: (i) personnel management, (ii) fiscal autonomy, (iii) procurements, and (iv) service planning and programming.

i. *Personnel management*

Personnel management involves the planning for staff needs; recruitment, hiring, employing, and disciplining/firing of staff; transfers; appointments; and the provision of incentives. This section describes the prevailing practices of the Gida Ayana *Woreda* on these issues.

In terms of planning for local staff needs, most informants from the service board pointed out that the *woreda* has a considerable degree of latitude over planning and budgeting for health staff. The facility head confirmed that the *woreda* was fully accountable for planning and budgeting for health service providers needs. In this regard, the reform is fully autonomous and competent. An informant further noted that the sector prepares a recruitment plan to be presented to the *woreda* cabinet. The cabinet approved human resource needs after scrutinizing the required numbers, the levels of qualification, and the budget for remuneration. Upon approval, the health office directly requests higher offices to either post the recruitment and deploy to the *woreda* or ask the ministry to assign new graduates.

An informant from the health office emphasized his appreciation of the autonomy of the *woreda* in planning for staff needs as follows:

Yes, since 2002,woreda government had obtained self-government. With this arrangement, the woreda preserved its independence from higher officials and woreda ultimately began to produce personnel need plans locally. The hospital also plans its personnel need and requests the region to recruit (*WHO, IDI5*).

In response to the question of whether the informant from the sector office believed the autonomy improved the decisions of local politicians, one informant from *WHO* replies the following:

Yeah, with local rights we can plan, budget, and satisfy local staff needs (WHO, IDI2).

However, responses to the question of the authority and autonomy for recruiting and hiring of staff for local facilities show mixed results. According to health officials, decentralization program fully devolved the recruitment of support staff with the diploma and below diploma qualifications to the *woreda*. Thus, the sector office and civil service department post vacancies and recruit and hire for such posts. Zone and higher level authorities recruited and employed all technical staff for positions with specific educational requirements and supportive office workers for vacancies requiring an academic degree above the diploma. Some facility heads approve of the *woreda's* autonomy for the recruitment of non-technical posts:

All right, we are vested with the right to recruiting non-technical staff with the diploma and below the diploma. We post, select, and hire competent candidates. The process is very prompt, and such employees are relatively stable and quick at adapting to our work environment compared to staff employed by higher officials who even disappear after receiving an employment letter or one month salary (FH, IDI3).

A WHO interviewee declared that the *woreda* has no autonomy to recruit or hire technical staff:

Yes, we have no avenues open for recruiting these staff, no say about who is selected or not for our medical staff posts. Higher bosses hiring the candidates and lastly deploy to the woreda for the formalization of the employment (WHO, IDI5).

Several local informants had serious concerns over the management of posting and recruiting local technical staff at higher levels, explaining that the practice promotes dependency of local institutions on higher authorities. These informant also described that the lack of concern among higher officials about hiring skilled staff compromised the quality of local services. A health center head noted the challenges of hiring inappropriate staff as follows:

Sub-national governments often recruit staff without considering our demand. Why? For instance, in 2016, Hangar Health Center requested community health agents for a rural health post, but they hired clinical nurses (*FH, IDI7*).

In terms of disciplining health workers, several informants noted that Gida Ayana has some autonomy in penalizing frontline workers who violate civil service laws. One official described his experience as follows:

Yes, the head of Angar Health Cener reported to us in 2016 that they disciplined five technical staff members by withholding one month salary for repeated absenteeism from work (*WHO, IDI6*).

All facility heads and service boards reported that complaints come from service users workers

provided inadequate services and these complaints should serve as a basis for penalizing offenders. Many male FGD participants suggested that several service users do not know their rights due to illiteracy, poor awareness, and lack of capacity that prevents them from exercising their rights. A community representative on a hospital board reflected her experiences as follows:

Users often preferred to tell board members about complaints they faced at the hospital to hold providers accountable due to fear of retribution and so forth. We informally obtained users' complaints and reported them to the head to take measures. For example, the hospital fired a general practitioner from his job in 2016 due to users' complaints (*SB, IDI4*).

An important issue in human resources management has to do with staff transfer and appointments. Many facility heads noted that the *woreda* has some autonomy for making appointments for local positions. Others stated their concern about the political patronage and clientelism in the appointment of staff. A medical director observed that officials give priority to certain individuals regardless of their performance and sometimes use their power to appoint their relatives and family members to positions in health centers and hospitals even if they are non-health personnel. One informant stated that staff appointment reinforced local patronage:

The code of having non-partisan and merit-based civil servants is right only on paper. The actual case, however, shows a partisan bias. The woreda often selected members of the local ruling party and those who had links with politicians. It usually nominated three staff for a single position, and the party then selects a candidate. The processes fed up usbecause our exhaustive proposals are like a 'toothless dog' (*SB, IDI11*).

Some of informants noted that the *woreda's* full autonomy over staff transfers within its jurisdiction across facilities, where patronage is also widespread. Some cited cases in which cabinet members pressured health officials to transfer their relatives from rural posts to facilities in the *woreda* capital. The head of a health post elaborated as follows:

The politicians bring their relatives from rural to urban vacancies even in other sector offices or deliberately give them political positions which might cause rural facility closure, community mistrust (*FH, IDI7*).

In principle, the *woreda* is responsible for sending and receiving staff to and from other *woredas* through transfers. But higher officials sometimes overruled *woreda* decisions, and as a result, there have been numerous unplanned transfers out of or into the *woredas* without the discretion of *woreda* health officials. The provision of an incentive scheme is critical to retaining health workers in rural areas and reducing staff turnover. In this regard, several health center heads noted that local facilities are currently experiencing high staff turnover due to a lack of established local staff incentive programs. They added that living and working conditions in remote rural *woredas* are not appealing to frontline workers and female workers often marry urban partners to leave the *woreda*. A board member of a health center noted as follows:

Ejere and Lalistu kebeles usually experience high staff turnover because health workers use such settings as a ladder to obtain better jobs in towns (*SB, IDI6*).

ii. *Fiscal autonomy*

Several health officials noted that health sector finance had heavily relied on sub-national government transfers to the *woreda* council, which accounted for over 85 percent of the *woreda*'s total expenditures. Except for small amounts of capital earmarked for items such as a drug fund, are spent on staff salaries took a large proportion of the transfer, over which the *woreda* council has little fiscal latitude. The head of the sector expressed his concern as follows:

Majority of the council's health budget comes from regional grants. We have also exercised little fiscal autonomy in collecting a small portion of revenue from local resources like land taxes, and user charges within the regional purview. These are low yielding sources and contribute little to the total budget (WHO, IDI5).

Budget distribution dissatisfied all heads of facilities and these informants also mentioned that though the cabinet rhetorically declares health as a priority, they rarely translated into action. In theory, 15 percent of the total *woreda* budget goes to health, but in fact the sector receives a smaller share. Health officials gave their opinion on whether budget distribution complies with the sector's budget proposals submitted to the council as follows:

We fail to fill some vacant posts. We often use the salaries of staff who died, left their jobs and the like to fill our budget gaps (WHO, IDI6).

All facility heads noted that facilities autonomously collect and utilize service fees upon approval by service boards and upon the final deliberations by the councils, which have moderately increased facilities' fiscal autonomy and flexibility in service planning. But setting and improving local tax bases or user fees rates is still subject to the approval of regional councils. The council imposed such a decision-making process and regulations in an exercise of top-down authority, in contrast with bottom-up management. The regional government also legislated extensive rules and regulations to control the utilization of this revenue.

iii. *Procurements*

Several informants from the health centers noted that the *woreda* finance buys office and stationery

materials through the pull system, following requests from all sectors, including the health office. The informants had some concerns that the finance office obtains bids only from its procurement committee. There is no space for other sectors, communities, and civil societies to scrutinize the transparency of the bidding and procurement processes. It was very traditional, less inclusive modes of decision-making.

Some informants in a sector office also questioned the quality and types of materials supplied. They further noted that the purchases were not compatible with purchase requisitions and specifications. For example, the marketing of tires for vehicles is often fraudulent. Furthermore, according to these informants, health facilities can purchase drugs and some medical equipment independently of the *woreda* pull system. A service board member also noted that the Oromia Regional Government office sometimes interfered in the drug procurement autonomy of the *woreda*. For instance, in 2016, the regional office retained earmarked drug funds without the knowledge of Gida Ayana *Woreda* officials and failed to send commensurable amounts of drugs. Retaining some amount of drug funds at region constrained the fiscal authority and autonomy of the local government.

iv. *Service planning and programming*

All local health sector informants noted that the *woreda* is not vested with the power of targeting new programs; it can deliver only the services already developed by the region. Regional informants described that all the health programs implemented in the *woreda* are joint ventures of the national and sub-national governments. According to policy makers/planners at the federal level, health programs currently offered at the lower primary health level are centrally determined by the primary health care packages but are open to regional-level adaptation without requiring further consideration by the *woredas*. A local board member noted that no forum was even prepared at the local level to inform targeted communities, private sectors, civil societies, and others about the recently introduced programs.

Zones play a significant role in the preparation of the *woreda* health plans. All local informants mentioned that the *woreda* planning team prepares the first draft plan at the zonal level after orientation by higher officials on regional or national programming guidelines, key indicators, regional targets, and a brief training on how *woredas* prepare *woreda* health plans based on the template. A health official added:

Our plans start in the zone. Every year, local planning teams, including facility heads travel to the eastern Wollega to set a draft plan from which we develop our final woreda-based health sector plan (WHO, IDI4).

An informant from the *woreda* health office mentioned that:

Though we are interested in preparing a woreda health plan on our own, we still lack planning experience and computer skills. We had one planning expert with a diploma, but he left us for a better job. An absence of training is a serious problem. We also go to the zone to share and agree with zonal targets and to meet regional interests (*WHO, IDI2*).

d) Accountability

Under the following sub-themes, the study analyzed some of the local accountability dimensions of public health service delivery reported by participants: (i) consultation and community forum, (ii) information access level, (iii) service monitoring, and (iv) auditing and reporting.

i. *Consultation and community forum*

Consultation and community forums provide for stakeholder scrutiny of plan activities. Most male FGD participants across *kebeles* mentioned that service boards, health officers, and health facilities approve and submit work and budget plans with no stakeholder scrutiny or feedback on the drafts. A female FGD participant noted the following:

I have lived here for 35 years. No one comes to my kebele [Lalistu] for consultation on the plans. I don't know the officials except for a female worker who counseled me how to use maternal packages (*Female FGD1, Lalistu Kebele*).

About forums, male FGD participants noted that although there is a provision to bring together health officials, technical staff, boards, and residents to discuss service accountability, the woreda did not put this into effect. The informant added that failure to conduct a legislated community meeting and report sharing led to local actors neglecting their responsibilities.

A service board member from Ejere *Kebele* appreciated the accountability of health extension workers as follows:

What is tangible in my kebele is a pregnant-women meeting held every month by health extension workers and heads of women groups (*SB, IDI9*).

ii. *Information access level*

The availability of information regarding local health agendas and decisions is critical to ensuring accountability. Several FGD participants mentioned that the woreda had improved accessibility to health information with the deployment of extension workers and women groups. People living in poor, remote *kebeles* primarily access information through health extension workers and women groups. Many female participants indicated that health extension workers occasionally disseminate posters and provide health information to households. One male participant noted that informal sources of information are *woreda* administration council members; he reported,

We got more information on the health agenda or decisions from our neighborhood council members than from formal institutions like kebele and health officials (*Male FGD2, Ayana Kebele*).

All community participants appreciated the practice of the *woreda* council in announcing the *woreda* budget by posting it on billboards; this practice increased the accountability of the local government to ordinary residents. Others noted that institutions use various instruments to ensure their fiscal responsibility to clients:

Health facilities usually pin their budget and list of service charges on walls and notice boards to announce revenue, expenses, new drug names, and user charge-free programs (*Male FGD2, Ejere Kebele*).

Despite the above positive steps for increasing information availability, all informants noted that local channels such as radios and newspapers are lacking, and this constrains initiatives for creating awareness about health agendas among community members.

iii. *Service monitoring*

One way of ensuring accountability is by putting complaint-redressing mechanisms in place and ensuring that clients use them. Several male FGD participants, however, underscored that they lack capacity and are ignorant of their health rights, a situation that limits their ability to monitor services and forward their complaints. They added that clients fear retribution from providers for voicing complaints freely through opinion boxes or feedback booklets placed around each facility ward aimed at promoting downward accountability. Others described evasion by some facility managers of their downward answerability to clients as follows:

Many others including me usually put complaints in the opinion box on the medical ward, for instance, the absence of drugs prescribed for us by a doctor or other professionals, and frequently referral system to private drug retailers by the hospital pharmacist. But the manager never read our notes submitted to air our complaints (*Male FGD1, Ayana Kebele*).

All informants in the *woreda* mentioned the community score card that enabled citizens to assess health facilities and the survey report card that assessed user satisfaction in 2016; both were available at all facilities. However, these cards are no longer in use due to lack of adequate and skilled human power, financial resources, and training for local staff on how to administer, analyze, report, and design interventions to fill potential gaps.

iv. *Reporting and auditing*

One board member noted that:

Every quarter, the board, sector office, or regional bureau review plan performance. But the direct involvement of ordinary residents in plan and budget tracking is not yet thinkable to ensure downward accountability (SB, IDI11).

All facility informants described the transmission of activity and budget information from facility actors to the overseeing higher line offices to ensure upward accountability. They also described quarterly council hearings of reports at which the sector office and hospital manager answered to *woreda* and regional legislators, respectively.

A service board member reported that there is a local auditing system on the utilization of resources. For example, one of the results of an audit exercise in the *woreda* has been an investigation of drug funds embezzled by higher authorities in 2016.

e) Participation

The study examined the nature of public involvement in health service delivery by looking at the participatory institutional structure and the forms of participation.

i. *Institutional structure*

This analysis found two types of participatory institutional organization in the *woreda*: the service boards and the women team and network. Regarding the boards, health office informants reported that board structures have become popular in the management of health facilities. They added that the region usually appointed most of health facility committee members from *woreda sector offices* or zonal departments; this method of forming facility health governing bodies reduces their legitimacy as the best avenue for public participation. A health center informant raised concerns over the limited membership of community representatives:

The community has only one representative out of seven board members at the health center. Such under representation in the health committee is not an adequate voice for the people of the woreda (FH, IDI5).

Also, all facility heads were concerned that most board members are officials holding other public positions, which sometimes make them unavailable for board meetings. Thus, the practice of multiple appointments among health facility service board members and the centralization of their assignment at regional level negatively affected the autonomy and effectiveness of the boards. Some board members were uncertain about their role and relationship with the people to whom they are answerable and described that they did not know concerning the dynamics of the health agenda. All policy-makers noted that primary health facility board members have an independent decision-making advantage. The committee members passed most decisions at the health-unit level, cutting through bureaucratic rules that delay drug procurement, without necessarily involving the councils or the sector office.

All facility heads noted that women team of 30 members comprised five networks of six members each across the villages. These women structures are very inclusive that significantly increase women representation and roles in health promotion and mobilization. The health extension workers with women groups accomplished several health activities concerning regional policies.

Heads of health posts added that women institutions improved service availability to mothers regardless of location or socioeconomic privilege. A health center head noted that:

Their promotion is cost-effective; inclusive program, village-based structures bridge gaps during staff turnover and improve rural women's trust to use care (FH, IDI3).

ii. *Forms of participation*

Community participation took two forms: non-cash and cash mobilization of resources. *Woreda* health officers reported that the community has built and owned 21 health posts and many public toilets. The heads of Ejere and Lalistu health posts explained that residents of each *kebele* raised roughly 1,455 the $US to build houses for health extension workers in 2015. Another informant mentioned that in 2015, farmers customarily stored 99 quintals of grain and saved 2,103 the $US for pregnant women who came to a waiting home for childbirth. The community built two pregnant women temporary waiting home.

f) Effects of decentralization on woreda health service delivery

i. *Improved coverage*

Several local informants from a health office listed several improvements made in the coverage of facilities in the *woreda* since the implementation of the decentralization of health program in Gida Ayana. All facility heads added as follows:

Yes, these days all kebeles have a health post, each serving around 6,000 people, located within reach of the community, in fact in the middle of the kebele (FH, IDI7).

Informants from a service board recalled that there was only a single health center in Gida Ayana *Woreda* before the reform. However, within a few years of decentralization, the government expanded services by adding four health centers, 28 health posts, and a primary hospital. A service board member added:

We had only one nurse before the reform. Now, Ayana health center alone has five nurses (*SB, IDI9*).

ii. *Improved quality of local decisions*

All policy-makers noted that service boards at health-unit levels employed independent decisions over how public resources at health-unit levels improved local responsiveness through timely purchase of drugs. One health official explained:

The boards' decision declined local bureaucracies and delayed medical supplies. This improved the quality of service outcomes like safe births, transparency of the utilization of scarce resources (WHO, IDI4).

iii. *Improved quality of health professionals*

All policy-makers noted that in the last centralized regime, the lack of adequate deployment and quality professionals in local facilities had resulted in countless complaints, especially regarding maintaining the quality of maternal care and care for under-fives. However, it has been only in the last 15 years that the government made some efforts to find a solution to this problem. Negative attitude of some staff continues to affect the quality of health outcomes as before. A woman commented:

I know, female nurses at health centers are capable enough to handle any maternal complications. But a misbehaved nurse at a delivery ward neglected me when I gave birth to (or Bona), my last child (Female FGD2, Angar Kebele).

iv. *Quality and availability of medical supplies*

A *woreda* office head noted that the local government relatively better equipped the health centers with medical supplies since 2002 due to the empowerment of the health facilities to purchase drugs to improve health outcomes. On the other hand, female FGD members stated that lack of enough beds and poor and degraded delivery rooms built of wood and mud in the Angar health center compromised the quality of childbirth service. The results agree with the information received from interviews with facility heads and group discussions with male community FGDs. Also, a woman with a 6-months-old child summarized the problem as follows:

Old and unclean beds in the child delivery room in Angar were risks for both women and the newborns. I used unsafe bed when I gave birth to this child (or Sabanbon) (*Female FGD2, Lalistu Kebele*).

Several community participants from Ejere and Lalistu also had low trust and some dissatisfactions in the health centers because drugs were not consistently available; they ordered medicine from private pharmacies due to their inability to secure them from the health facilities. A service board member added that the embezzlement of drug funds by higher authorities also affected local health outcomes in the study *woreda*.

V. Discussion

This qualitative study explored the implementation of healthcare reform in the decentralized system of Gida Ayana *Woreda*. Results show that the health reform of 2002, although improving the overall delivery of services, has not yet adequately changed the health sector about authority, autonomy, accountability, participation, and service quality. Although the first four service governance functions are intermediate outputs of the decentralization program of the health sector, they

remain critical to the quality of health service delivery throughout all stages of the planning and implementation of the program (Brinkerhoff, 2004). About authority, the sector office has been given considerable responsibility for planning and implementing health services, administering facilities, providing and improving health services and information, controlling resources, procuring materials, and engaging the community. The delivery of services, however, depends on the extent of autonomy the *woreda* enjoys in several areas of engagement that affect service delivery.

Our study showed that Gida Ayana *Woreda* is autonomous in planning and budgeting for staff needs. We also found significant areas of autonomy over personnel management whereby the *woreda* can formalize new employment, discipline, fire, transfer internally, appoint, manage, and pay staff under the regional policy. These findings corroborate a study that concluded that decentralization improved local personnel management (Wang et al., 2002). However, administrative authority over recruitment and transfer of technical staff continues to be undertaken by higher authorities, a practice that might open ways for nepotism and clientelism. Budget constraints in recruiting new staff also remain most important challenges and affect the implementation of programs and the quality of local health outcomes. A study carried out elsewhere in Ethiopia reported similar results (Kassa & Shawel, 2013). Our study also found that the *woreda* failed to institute incentive schemes and to address poor working conditions for health staff, a basic cause of high turnover, especially in the remote rural areas of Ejere and Lalistu. A similar study linked the lack of local incentives schemes, low salaries, and poor quality of rural infrastructures to high staff turnover (Francoa et al., 2002).

Our analysis indicates that Gida Ayana *Woreda* has no adequate financial capacity and is heavily dependent on fiscal transfer from the regional office. Informants from the *woreda* health office estimated that sub-national government transfers constituted over 85 percent of the *woreda* budget and that the local taxes covered the remaining proportion of the total expenditure under the purview of the region. Other officials added that setting or increasing the local tax base and user fees is still subject to the approval of the Oromia regional government state council. An elaborated rules legislated by the Oromia state government also controlled the utilization of facility revenue in the study *woreda*. Several studies noted that inadequate funding of local authorities caused poor policy implementation and poor health outcomes (Jeppsson & Okuonzi, 2000; Kojo et al., 2011; Frumence et al., 2013).

Our study revealed that local bidding and procurement processes lack accountability and transparency. This problem persists because the *woreda* finance office conducted bidding and procurements alone, without any representation from or consultation with the concerned sectors, community representatives, and other actors. The lack of accountability and transparency in the woreda caused mismatches between the procurement plan requested and the type and quality of the actual purchase.

Gida Ayana *Woreda* has gained autonomy over the building of health posts, public toilets, maternal waiting homes, and housing for rural workers through community participation. A study in Indonesia noted that the mobilization of community resources and project monitoring by local community improved health outcomes (Purwaningrum et al., 2010).

Our study further revealed that the *woreda* is not yet autonomous over service programming because higher officials developed new programs. The targeted communities are not involved in the needs assessment process that would enable them to gear community-level program initiatives to the needs of the local people. A study carried out in India found that a low level of knowledge and awareness of the community users about preventive and curative health service packages programming adversely affected health outcomes (Panda & Thakur, 2016). Other study added that limited consultation and lack of users' involvement in the health program development influenced service utilization and outcomes (Abayneh et al., 2017). Our study found that prioritizing activities from the bottom up hardly exists in the study area. Plans are heavily scrutinized to satisfy regional indicators conveyed through the zoning department in the form of an indicative plan. The various performance indicators of the *woreda* and the region are identical.

Our study found that key actors could not have the capacity to perform their planning and budgeting roles at the *woreda* level. Specifically, inadequate technical competence and inconsistent training hindered effective planning and implementation. *Woredas* in different parts of Ethiopia often reported these technical deficiencies in setting health programs (Christian Relief and Development Association [CRDA], 2004; Wamai, 2009). Another study identified lack of capacity of key actors to carry out their planning and budgeting activities at the lower level and consequent impacts on the quality of care and services (Tsofa et al., 2017).

Our study confirms that low community involvement in planning and lack of understanding among providers about the population they serve leads to poor outcomes. These results corroborate those of other studies (Nannyonjo & Okoto, 2013; Kilewo & Frumence, 2015; Abayneh et al., 2017; Regmi et al., 2017). Other studies show that the process of deepening decentralization to *woreda* levels has undermined popular participation by civil society

organizations and communities (CRDA, 2004; Wamai, 2009; Kassa & Shawel, 2013).

Furthermore, our analysis shows that general forums and sharing of reports with ordinary citizens are still uncommon. Although primary care units are the first points of contact for patients and are viewed as mechanisms for ensuring social accountability (Collins et al., 2002), this is not the case in Gida Ayana *Woreda,* which still implements social accountability service monitoring tools at the regional level. A similar study noted that the absence of established institutional mechanisms for citizens to assess the accountability of local facilities caused information gaps (Kassa & Shawel, 2013). A study in highly constrained public institutions found cost and inadequate local skill to be critical impediments in utilizing such tools (Yilmaz & Venugopal, 2008). Similarly, although opinion boxes, reports, and auditing records are becoming increasingly used monitoring tools, users' illiteracy; fear of retribution; lack of knowledge on why, how, and where to present complaints; and the failure of facilities to respond to complaints highly limit the usefulness of monitoring tools. Such kinds of problems of presenting complaints among service users are consistent with the findings of Masanyiwa et al. (2013).

Our study showed that decentralization energized community participation through representatives in service boards and women's structures in the forms of both cash and in-kind contributions. There were, however, some limits on participation. For instance, although the revised health policy specified the need for a stronger decision space for *woreda* governments, Oromia Region has retained control over board appointments, thus significantly limiting the *woreda's* service management capability. Double-job positions and inadequate training further hindered boards from effective service management. Women's structures are slowly beginning to assist health extension workers by involving communities in health promotion. A study in Indonesia found women groups to be the main hubs for communicating health programs to the local people (Purwaningrum et al., 2010). But the potential role of women committees in Gidda Ayana remains highly unknown because of lack of training, illiteracy, and inadequate support from health officials.

The study also indicates that decentralization improved health service coverage and the quality of health professionals and health services. This finding is consistent with Wamai (2009), who noted that healthcare reform expands primary health coverage universally and increases skilled health human power which in turn increased both the quantity and quality of health services delivered (Semali et al., 2005). Several studies have reported that maternal, infant, and under-five mortality rates decrease with increasing numbers of skilled personnel (World Bank, 2004; CSA, 2017). Our study also found that local facility service boards enhance the quality of local decision-making processes, specifically in the area of drug supply. The enhancement of the quality decision making among health service board in this study agrees with a work by Yang et al. (2017). Our analysis also shows that disrepair of maternal delivery rooms, ill-equipped facilities or poor quality of beds in delivery wards, patient dissatisfaction with care received during child delivery, and providers' behavior were constraints in improving the quality of child delivery services. Similar studies in Ethiopia and elsewhere have reported that the quality of service outcomes suffers from poor infrastructure and lack of medical supplies and essential drugs, as indicated by patient dissatisfaction with the available care (Brinkerhoff, 2004; CRDA, 2004; Kassa & Shawel, 2013; Panda & Thakur, 2016; Molina, 2017).

VI. Strengths and Limitations

This study has some weaknesses. First, we confined the study to Gida Ayana *Woreda* in Ethiopia. Thus the results of the study may not represent the actual trends in the implementation and effect of decentralized public health reform across Ethiopia. Second, this qualitative study does not provide quantitative results. Despite these limitations, the study gives insights into the process of decentralizing health services in the country by identifying the challenges, opportunities, and achievements of the decentralization reform in a particular *woreda.*

VII. Conclusion and Policy Implications

Even though the decentralized public health delivery system promotes community participation in service programming and planning processes, this study found that health sector programming or planning and budgeting traditions were not prioritized based on community needs in Gida Ayana *Woreda*. Though the country had designed this reform in earnest, service programming failed to involve key actors in the design and implementation of the local health agendas. Thus, we propose that healthcare reforms include local communities and non-governmental actors towards bottom-up designing, targeting, and preparing health plans and programs (Semali et al., 2005; Abayneh et al., 2017; Tsofa et al., 2017).

The study found unnecessary and counterproductive interventions of higher officials and clientelism in different areas of local personnel management, such as staff transfer, recruitment, and appointment; these interventions had the negative impact on healthcare reform implementations and quality of care. Therefore, avoiding such interventions, improving fiscal autonomy, reducing the *woreda*'s resource dependency, and increasing *woreda* decision power through the recruitment of adequate and

competent staff with better salaries and incentives for staff retention should be priority areas (Hutchinson, 1999; Semali et al., 2005; Sakyi, 2008).

Moreover, our study shows that the quality of care suffers from poor infrastructure and supplies. Hence, improving infrastructure and ensuring adequate pharmaceutical supplies and beds in delivery wards should be prioritized (CRDA, 2004; Wamai, 2009). Also, use of the balanced scorecard and citizen report card system, advocated for close monitoring of health system strengthening interventions (Panda & Thakur, 2016), should be considered. Employing such service monitoring practices and more inclusive modes of decision-making, together with holding community forums, increasing the community's access to health information, improving literacy and awareness levels, and appointing service boards, may help to enhance the community's trust about health services. Increasing the *woreda* government's transparency and accountability can improve the quality of healthcare. Several studies have reported that access to health information increased maternal and child health service utilization and improved infant, under-five, and maternal mortality rates (Jiménez & Smith, 2005; CSA, 2017).

We recommend that potential researchers would include *woredas* in future studies of the decentralized healthcare reform in Ethiopia. Including *woredas* will allow researchers to examine wide variation in the decentralized healthcare reform implementation and identify its local impacts among the regions and also within regions.

Acknowledgments

We acknowledge the financial supports by Wollega and Addis Ababa Universities. We also acknowledge the support of the Ejere, Ayana, Angar and Lalistu *kebele* administrations and the head of Gida Ayana *Woreda* Health Office in the community and staff mobilization for interviews and FGDs, respectively, as well as participating residents and data collectors. We also want to thank Ann Byers for editing the manuscript at short notice.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Funding

Financial support for this research was provided by Addis Ababa University and Wollega University. All funds have no grant numbers.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author, [Habtamu T], upon request.

References

1. Abayneh, S., Lempp, H., Alem, A., Alemayehu, D., Eshetu, T., Lund, C., Semrau, M., Thornicroft, G., & Hanlon, C. (2017). Service user involvement in mental health system strengthening in a rural African setting: Qualitative study. BMC Psychiatry, 17(187), https://doi.org/10.1186/s12888
2. Beard, C., & Redmond, S. (1979). Declaration of Alma-Ata. Lancet, 313(8109), 217–218.
3. Brinkerhoff, W. (2004). Accountability and health systems: Toward conceptual clarity. Health Policy Planning, 19(6), 371–379.
4. Central Statistical Agency [CSA] of Ethiopia. (2013). Population projection of Ethiopia for all regions at woreda level from 2014-2017. Addis Ababa, Ethiopia: Central Statistical Agency [CSA].
5. Central Statistical Agency [CSA] of Ethiopia. (2017). Ethiopia Demographic and Health Survey 2016. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.
6. Christian Relief and Development Association [CRDA]. (2004). The participation of NGOs/CSOs in the health sector development program of Ethiopia. Addis Ababa.
7. Collins, D., Omar, M., & Tarin, E. (2002). Decentralization, health care and policy process in the Punjab, Pakistan in the 1990s. Int J Health Plann Mgmt, 17, 123–146.
8. Dickovick, T., & Gebre-Egziabher, T. (2014). Ethiopia: Ethnic federalism and centripetal forces. In: J. Wunch, & T. Dickovick (Eds.), Decentralization in Africa: The paradox of state strength (pp. 69–89). Boulder, CO: Lynne Rienner.
9. Federal Democratic Republic of Ethiopia. (1995). The Constitution of 1995. Proclamation No. 1/1995.Negarit Gazeta. Addis Ababa, Ethiopia.
10. Ethiopia Health Sector Development Programme. (2006). Report of the final evaluation of HSDP II: 31st January – 6th March 2006. Addis Ababa: Federal Ministry of Health. Retrieved from http://www.nationalplanningcycles.org/sites/default/files/planning_cycle_repository/ethiopia/report_of_the_final_evaluation_of_hsdp_ii_with_indicator_trends1.5.2006-fin.pdf
11. Fiseha, A. (2007). Theory versus practice in the implementation of Ethiopia's ethnic federalism. In: D, Turton (Ed.), Ethnic federalism: The Ethiopian experience in comparative perspective. Oxford: Jamse Currey. pp. 131–164.
12. Francoa, M., Bennett, S., & Kanfer, R. (2002). Health sector reform and public sector health worker motivation: A conceptual framework. Soci Sci Med, 54, 1255–1266.
13. Frumence, G., Nyamhanga, T., Mwangu, M., & Hurtig, A. K. (2013). Challenges to the implementation of health sector decentralization in Tanzania:

Experiences from Kongwa district council. Global Health Action, 20983(6), 1–11.
14. Gebre-Egziabher, T. (2014). Decentralization and regional and local development: Trends and policy implications. In: D Rahmato, M Ayenew, A Kefale, & B Habermann [Eds.] Reflection on development in Ethiopia: New trends, sustainability and challenges. Addis Ababa: Forum for Social Studies. pp. 130–168.
15. Hutchinson, P. (1999). Progress on decentralization in Uganda in health care: Selected issues. Nature Science, 1(3), 343–365.
16. Jeppsson, A., & Okuonzi, A. (2000). Vertical or holistic decentralization of the health sector? Experiences from Zambia and Uganda. Int J Health Plann Mgmt, 15, 273–89.
17. Jiménez, D., & Smith, P. C. (2005). Decentralisation of health care and its impact on health outcomes. Discussion Papers 05/10, Department of Economics, University of York.
18. Kassa, A., & Shawel, Y. (2013). Integrating all stakeholders: Health service governance in Addis Ababa. In: P Mihyo, & P Chanie (Eds.), Thirty years of public sector reforms in Africa:Selected country experiences. Kampala: Fountain. pp. 55–131
19. Kassa, A. (2015). District level decentralization and public service delivery in Ethiopia: Cases from Amhara region Intern J African Asian Studies, 10, 24–39.
20. Kilewo, G., & Frumence, G. (2015). Factors that hinder community participation in developing and implementing comprehensive council health plans in Manyoni district, Tanzania. Global Health Action, (8)26461. https://doi.org/10.3402
21. Kloos, H. (1998). Primary healthcare in Ethiopia: From Haile Sellassie to Meles Zenawi. Northeast African Studies, 5(1). pp. 83–113.
22. Kojo, S., Awoonor, K., & Adzei, F. (2011). Barriers to implementing health sector administrative decentralization in Ghana: A study of the Nkwanta district health management team. J Health Organ Mgmt, 25, 400–19.
23. Kwamie, A., Agyepong, A., & Dijk, V. (2015). What governs district manager decision making? A case study of complex leadership in Dangme. Health Systems Reform, 1(2), 167–177.
24. Lee, J. S. (2015). The process of decentralisation in Ethiopia since 1991: Issues on improving efficiency. Korea Review of International Studies, 3–16. Retrieved from https://gsis.korea.ac.kr/wp-content/uploads/2015/06/16-1-01-Jinsang-Lee.pdf
25. Masanyiwa. Z., Niehof, T., & Termeer, C. (2013). Institutional arrangements for decentralized water and health services delivery in rural Tanzania: Differences and constraints. Soc Polit Sci, 1(4), 77–88.
26. Mehrotra, S. (2006). Governance and basic social services: Ensuring accountability in service delivery through deep democratic decentralization. J of Intern Development, 18, 263–283.
27. Menon, S. (2006). Decentralization and health care in the former Yugoslav Republic of Macedonia. International Journal of Health Planning and Management, 21(1), 3-21.
28. Mills, A. (1990). Decentralization concepts and issues: A review. In: A. Mills, P. Vaughan, L. Smith, & I. Tabibzadeh (Eds.), Health system decentralization: Concepts, issues and country experiences (pp. 10-42). Geneva: World Health Organization.
29. Molina, G. (2017). An integrity perspective on the decentralization of the health sector in Colombia. Qualitative Social Research, 10(2), 1–21.
30. Murthy R., & Klugman, B. Service accountability and community participation in the context of health sector reforms in Asia: Implications for sexual and and reproductive health services. Health Policy Plan. 2004;19(1): 78-86.
31. Nannyonjo, J., & Okot, N. (2013). Efficiency of health service delivery in Uganda. J of African Development, 15(1), 125–158.
32. Oromia Health Bureau [OHB]. (2015). Gida Ayana Woreda: Woreda based health sector plan target and performance report. Finfinne [Addis Ababa]: Oromia Health Bureau [OHB], Ethiopia.
33. Oromia Regional Satate [ORS]. (2001). The revised constitution of the Oromia regional government of 2001. Proclamation No. 2., November, 2001. Finfinne [Addis Ababa]: Oromia regional Satate [ORS], Ethiopia.
34. Oromia Regional Satate [ORS]. (2002). District level decentralization program, 2002. Finfinne [Addis Ababa]. Oromia regional Satate [ORS], Ethiopia.
35. Oromia Regional Satate [ORS]. (2005). A proclamation to provide health service delivery and administration of Oromia region. Proclamation No. 93/2005. Finfinne [Addis Ababa]. Megeleta Oromia, Oromia Regional Satate [ORS], Ethiopia.
36. Oromia Regional Satate [ORS]. (2013). A directive of linking health centre and health post of Oromia region. Direstive No. 08/2013. Finfinne [Addis Ababa]. Oromia regional Satate [ORS], Ethiopia.
37. Oromia Regional Satate [ORS]. (2014). A directive of health delivery and administration of Oromia region. Directive No. 08/2015. Finfinne [Addis Ababa]. Oromia regional Satate [ORS], Ethiopia.
38. Panda, B., &Thakur, P. (2016). Decentralization and health system performance: A focused review of dimensions, difficulties, and derivatives in India. BMC Health Services Research, 16(Suppl 6), 1–14. https://doi.org/10.1186/s12913
39. Pundhi, R., & Boke, A. (2015). Assessment of decentralized local governance performance for service delivery in Ethiopia: The case study of

Angacha District. European Academic Research, 3(3), 3607–3635.
40. Purwaningrum, F., Yoganingrum, A., McDonald , F., Short, D., & Ariani, D. (2010). Health governance in the local level: The case of decentralization, planning and accountability in Gunungkidul, Indonesia. Retrieved from https://www.zef.de/uploads/txzefportal/Publications/a54e_purwaningrum%20et%20al%20on%20health%20governance%20in%20Gunungkidul.pdf
41. Regmi K., Naidoo J., Pilkington P., & Greer, A. (2017). Decentralization and district health services in Nepal: Understanding the views of service users and service providers. Journal of Public Health, 32(3), 406–417.
42. Rifkin, B. (2014). Examining the links between community participation and health outcomes : A review of the literature. Health Policy and Planning, 29, 98–106.
43. 43. Rondinelli, D., McCullough. J., & Johnson, R. (1989). Analysing decentralization policies in developing countries: A political - economy framework. Development and Change, 20, 57-87.doi:10.1111/j.14677660.1989.tb00340.x
44. Sakyi, K. (2008). A retrospective content analysis of studies on factors constraining the implementation of health sector reform in Ghana. Int J Health Plann Manag, 23(1), 259–285.
45. Semali, I. A., Tanner, M., & de Savigny, D. (2005). Decentralizing EPI services and prospects for increasing coverage: The case of Tanzania. International Journal of Health Planning and Management, 20(1), 21–39.
46. Smith, C. (1997). The decentralization of health care in developing countries: Organizational options. Public Admin Devel, 17(4), 399–412.
47. Tang, S., & Bloom, G (2000). Decentralizing rural health services: A case study in China. Int J Health Plann Mgmt, 15, 189–200.
48. Tong A., Sainsbury, P., & Craig, J. (2018). Consolidated criteria for reporting qualitative research: A 32-item checklist for interviews and focus groups. Intern J Quality Health Care, 19(6), 349–357.
49. Tsofa, B., Molyneux, S., Gilson L., & Goodman, C. (2017). How does decentralisation affect health sector planning and financial management? A case study of early effects of devolution in Kilifi county, Kenya. International Journal for Equity in Health, 16(1), 151). doi:10.1186/s12939-017-0649-0.
50. United States Agency for International Development [USAID]. (2009). Democratic decentralization programming handbook. Washington, DC., USA.
51. Wamai, G. (2009). Reviewing Ethiopia's health system. JMAJ, 52(4), 279–286.
52. Wang, Y., Collins, C., Tang, S., & Martineau, T. (2002). Health systems decentralization and human resources management in low and middle income countries. Public Admin Dev, 22, 439–453.
53. World Bank. (2004). Ethiopia: A country status report on health and poverty.
54. Wunsch, J. (2014). Decentralization: Conceptual and analytical issues. In: J Wunsch, T Dickovick. (Eds.), Decntralization in Africa: The paradox of state strength. London: Lynne Rienner. pp. 1–22.
55. Yang, C W., Yan, Y H., Fang, S C., Inamdar, S N., & Lin, H C. (2017). The association of hospital governance with innovation in Taiwan. Int J Health Plann Mgmt, 1–9. https://doi.org/10.1002/hpm.2441
56. Yilmaz S., & Venugopal, V. (2008). Local government discretion and accountability in Ethiopia (Working Paper 08-38). Atlanta: Georgia State University.
57. Yin, R K. (2003). Case study research: design and methods. Thousand Oaks: Sage.

Global Journals Guidelines Handbook 2019

www.GlobalJournals.org

FELLOWS

FELLOW OF ASSOCIATION OF RESEARCH SOCIETY IN MEDICAL (FARSM)

Global Journals Incorporate (USA) is accredited by Open Association of Research Society (OARS), U.S.A and in turn, awards "FARSM" title to individuals.The 'FARSM' title is accorded to a selected professional after the approval of the Editor-in-Chief/Editorial Board Members/Dean.

- The "FARSM" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall,Ph.D., FARSS or William Walldroff, M.S., FARSM.

FARSM accrediting is an honor. It authenticates your research activities. After recognition as FARSM, you can add 'FARSM' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, and Visiting Card etc.

The following benefits can be availed by you only for next three years from the date of certification:

FARSM designated members are entitled to avail a 40% discount while publishing their research papers (of a single author) with Global Journals Incorporation (USA), if the same is accepted by Editorial Board/Peer Reviewers. If you are a main author or co-author in case of multiple authors, you will be entitled to avail discount of 10%.

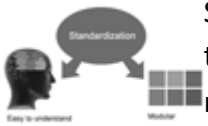
Once FARSM title is accorded, the Fellow is authorized to organize a symposium/seminar/conference on behalf of Global Journal Incorporation (USA). The Fellow can also participate in conference/seminar/symposium organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent.

You may join as member of the Editorial Board of Global Journals Incorporation (USA) after successful completion of three years as Fellow and as Peer Reviewer. In addition, it is also desirable that you should organize seminar/symposium/conference at least once.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The FARSM can go through standards of OARS. You can also play vital role if you have any suggestions so that proper amendment can take place to improve the same for the benefit of entire research community.

As FARSM, you will be given a renowned, secure and free professional email addres with 100 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.



The FARSM will be eligible for a free application of standardization of their researches. Standardization of research will be subject to acceptability within stipulated norms as the next step after publishing in a journal. We shall depute a team of specialized research professionals who will render their services for elevating your researches to next higher level, which is worldwide open standardization.

The FARSM member can apply for grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A. Once you are designated as FARSM, you may send us a scanned copy of all of you credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria. After certification of all your credentials by OARS, they will be published on your Fellow Profile link on website https://associationofresearch.org which will be helpful to upgrade the dignity.

The FARSM members can avail the benefits of free research podcasting in Global Research Radio with their research documents. After publishing the work, (including published elsewhere worldwide with proper authorization) you can upload your research paper with your recorded voice or you can utilize chargeable services of our professional RJs to record your paper in their voice on request.

The FARSM member also entitled to get the benefits of free research podcasting of their research documents through video clips. We can also streamline your conference videos and display your slides/ online slides and online research video clips at reasonable charges, on request.

The FARSM is eligible to earn from sales proceeds of his/her researches/reference/review Books or literature, while publishing with Global Journals. The FARSS can decide whether he/she would like to publish his/her research in a closed manner. In this case, whenever readers purchase that individual research paper for reading, maximum 60% of its profit earned as royalty by Global Journals, will be credited to his/her bank account. The entire entitled amount will be credited to his/her bank account exceeding limit of minimum fixed balance. There is no minimum time limit for collection. The FARSM member can decide its price and we can help in making the right decision.

The FARSM member is eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get remuneration of 15% of author fees, taken from the author of a respective paper. After reviewing 5 or more papers you can request to transfer the amount to your bank account.

MEMBER OF ASSOCIATION OF RESEARCH SOCIETY IN MEDICAL (MARSM)

The ' MARSM ' title is accorded to a selected professional after the approval of the Editor-in-Chief / Editorial Board Members/Dean.

The "MARSM" is a dignified ornament which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., MARSM or William Walldroff, M.S., MARSM.

MARSM accrediting is an honor. It authenticates your research activities. Afterbecoming MARSM,you can add 'MARSM' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, Visiting Card and Name Plate etc.

The following benefitscan be availed by you only for next three years from the date of certification.

MARSM designated members are entitled to avail a 25% discount while publishing their research papers (of a single author) in Global Journals Inc., if the same is accepted by our Editorial Board and Peer Reviewers. If you are a main author or co-author of a group of authors, you will get discount of 10%.

As MARSM, you willbe given a renowned, secure and free professional email address with 30 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The MARSM member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSM, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

It is mandatory to read all terms and conditions carefully.

AUXILIARY MEMBERSHIPS

Institutional Fellow of Open Association of Research Society (USA) - OARS (USA)

Global Journals Incorporation (USA) is accredited by Open Association of Research Society, U.S.A (OARS) and in turn, affiliates research institutions as "Institutional Fellow of Open Association of Research Society" (IFOARS).

The "FARSC" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., FARSC or William Walldroff, M.S., FARSC.

The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as "Institutional Board of Open Association of Research Society"-(IBOARS).

The Institute will be entitled to following benefits:

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA) The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.

The author fees of such paper may be waived off up to 40%.

The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of "Open Association of Research Society, U.S.A (OARS)" so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.
The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

Other:

The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

"

- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

Global Journals follows the definition of authorship set up by the Open Association of Research Society, USA. According to its guidelines, authorship criteria must be based on:

1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

Copyright

During submission of the manuscript, the author is confirming an exclusive license agreement with Global Journals which gives Global Journals the authority to reproduce, reuse, and republish authors' research. We also believe in flexible copyright terms where copyright may remain with authors/employers/institutions as well. Contact your editor after acceptance to choose your copyright policy. You may follow this form for copyright transfers.

Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Medical Research Paper

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of medical research then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.

Criterion for Grading a Research Paper (Compilation) by Global Journals

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

save our planet

Global Journal of Medical Research

Visit us on the Web at www.GlobalJournals.org | www.MedicalResearchJournal.org
or email us at helpdesk@globaljournals.org

ISSN 9755896