ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF EMERGENCY MEDICINE

ASSESSMENT OF SLEEP QUALITY AND ASSOCIATED FACTORS AMONG ADULT PATIENTS ADMITTED TO INTENSIVE CARE UNIT IN THREE SELECTED HOSPITALS, ADDIS ABABA, ETHIOPIA, 2020.

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Advisor's Approval Sheet

This is to certify that the thesis entitled "Assessment of sleep quality and associated factors of adult patients admitted to intensive care unit of Three selected hospitals, Addis Ababa, Ethiopia'' is submitted in partial fulfillment of the Msc with specialization in "Emergency medicine and Critical care nursing" to the Graduate Program of the College of Health Sciences of Addis Ababa University and has done by Taye Mezgebu, ID No: GSR/0426/11 under my supervision. Therefore, I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the Department.

_____ _____ _____

Name of Major Advisor Signature Date

_____ _____ _____

Name of Co advisor Signature Date

Declaration

I hereby declare that this Msc thesis is my original work and has not been presented for a degree in any other university and all sources of material used for this thesis have been duly acknowledged.

Name: _____

Signature: _____

Date: _____

Acknowledgment

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Acronyms

ICU= Intensive Care Unit

TASH= Tikur Anbesa Specialized Hospital

WHO= World health organization

REM=Rapid eye movement

SOFA= Sequential Organ Failure Assessments

NREM= none rapid eye movement

MV= mechanical ventilation

RCSQ= Richards-Campbell Sleep Questionnaire

SPSS- Stastically package for social science

PSQI- Pittsburgh sleep quality index

GCS- Glasgow coma scale

Abstract

Background: Sleep has basic physiologic function and mental health stability that encourage healing process progressively from severely ill. We spend almost a third of our life sleeping. Sleep disorder is a common complication of intensive care unit (ICU) stay. The etiology of sleep problems in patients' intensive care units (ICUs) is ignorance by clinical staffs but it thought to be related to environmental factors and other none environmental factors. Sleep disruption during intensive care unit stay is frequent. Sleep disturbances can play greater role negatively in recovery from critical illness. In critical ill patients, the happening of sleep deficit has shown to be more than 50 %

Objective: To assess factors that disturb sleep quality of adult patients admitted to the intensive care unit in the three selected Hospitals, Addis Ababa, Ethiopia 2020.

Methodology: Prospective cross-sectional Design deployed in three-selected Hospitals intensive care unit. A convenient sampling technique used to screen the participants. Modified freedman self-reporting and personal characteristics questionnaire used to collect the data sleep affecting environmental and none environmental factors from consented respondents who fulfill the inclusion criteria at the time of ICU stay, at discharge or during the recovery phase who were alert. Binary logistic and multivariable logistic regression used to obtain significant factors.

Result: - The majority of study nearly two third of participants (63.7%) were suffered from poor sleep quality that were admitted in the ICU. The study demonstrated that sleep quality in the ICU that mean score of sleep quality was 4.91$\pm$1.118 that significantly low compared with mean score of sleep quality was 6.33$\pm$1.245 at home (p=0.002). Length of stay, worrying, previous admission history, mechanical ventilation, daytime sleepiness, and marital status reported as stastically significant with poor sleep quality. The environmental factors were noise, pain, light and doctors/nurses activities that mean score of the factors were 6.6$\pm$1.270, 5.57$\pm$ 1.270, 5.10$\pm$1.570, and 5$\pm$1.61 respectively found sleep disrupting factors.

Conclusion and recommendation:-It is obvious that hospitalized patients are suffered from poor sleep quality in the ICU. Therefore, there are many environmental and intrinsic factors contributing for disturbing sleep quality in ICU that identified. I recommend daily sleep quality assessment as vital sign and incorporate in the nursing care plan by providing adequate education and training for ICU nursing staffs.

CHAPTER ONE:-INTRODUCTION

1.1 Background:-

Sleep is a cyclic, temporary unconscious state of cognitive and sensory disconnection from the external stimuli. Sleep period has its unique behavioral, electroencephalography, and physiological properties that it consists of four to six 90 to 100 minutes period which is alternative fashion cyclic during NREM and REM sleep periods which is taken 7 to 8 total sleep hours(1). Human being existence is impossible without sleep at all the life. Maslow defined the sleep state in his Hierarchy model as basic need sleep is a natural rest of the physiological activity to preserve the energy. In this sense sleep is an essential parts of the 24 hours cycle to restore the normal sleep state (2).

Intensive care units (ICU) are a highly complex area where critically ill patients' managed by Intensive care monitors and invasive devices (3). Difficult sleep is a subjective complaint of dissatisfaction with the quantity, timing of sleep that sleep discomfort is estimated to occur in approximately one-tenth of the general population(4). Delirium is a common acute confused state that is familiar for seriously ill patients, affecting up to 80% of patients with intensive care unit patients particularly on mechanical ventilation(5).

In critical ill patients, the happening of sleep deficit has shown to be more than 50 % (6). Sleeps in the intensive care unit (ICU) characterize by repeated disturbed nights and lack of the restorative sleep stages that need for the healing process (7). Sleep disruption during intensive care unit admission is frequent. It has practiced in critical illness patients even after transfer out of the ICU to recovery room. Sleep disturbances can widely influence patients' recovery from critical illness (8, 9). The sleep disturbance affect the body function that is essential for upturn to normal health state that is respiratory systems effect muscle weakness, reduce defense against infection, cardiovascular effects that result hypertension, heart failure and stroke, hormonal alteration that results insulin resistance diabetics. Generally sleep disorder potentially cause long-term consciences hypertension, diabetics mellitus, stroke and cardiovascular disease (10).Several factors are accountable for sleep disturbances in ICU.

A general approach to the patients concerning their night rest is a required (11). Factors reveal as the main cause of sleep disorder in the intensive care unit admitted patients sleep. From Environmental factors are take the main role of the sleep disturbing (12). Study revealed another medical activity and none environmental mentioned as causes of the sleep disturbance in the ICU (13).

Numerous factors contribute to sleep disturbance in ICU in different medical services. Environments together with none environments determined procedures engaged in ICU make it not easy to recognize the causes of sleep deprivation. Evidence suggested that sleep disruption is mainly due to a combination of internal and external factors. Individual patient sickness and prior experiences, together with variable severity of illness influence the potential to achieve effective sleep. Particular causes included discomfort, procedures, mechanical ventilation, medication administration and severity of underlying disease are contributed to sleep deprivation.(14–17) As the great nurse Florence Nightingale herself once said that “never to allow patient awake from sleep intentionally or accidentally”(18).

The importance of sleep for patient healing can be de prioritized in ICU due to the need to meet progressively more complex care needed. Sleep interruption has emerged as an indicator of adverse medical outcomes (19). Disrupted sleep impairs immune system, impaired resistance to infection, therefore, impaired wound healing, and cardio-respiratory consequences (11).

Measurements tool to assess level of sleep quality and related factors of intensive care unit patients can evaluate by objective and subjective assessment instruments, which are Polysomnography is the golden standards that able to identify the stage of the sleep by recording electromyogram and electro-oculogram that are reliable recording sleep stages. Another objective method helping to assess sleep status of the patient is actinography, which is wear on wrist and ankle by recording the movements of the body. The subjective measurements are self-reporting questionnaire, Richards Campbell Sleep Questionnaire, Pittsburgh Sleep Quality Index and Modified Freedman sleep quality questionnaire (20). This study aims to identify the factors affecting sleep under the freedman sleep questionnaire, which is answering the question of what are the factors disturbing sleep of the ICU patients the study area. The finding of this study will enable to minimize the factors by recommending stakeholders the possible resolution strategies.

1.2 Statements of the problems

Study revealed that occurrence of poor sleep after hospital discharge is 62% because of ICU hospitalization alter normal sleep architecture (8). In China using PSQI study that 57.4% of patients were poor sleep quality after admission to hospitals (3). This shows those patients who sleep normally at home but after hospitalization, their sleep became abnormally. In Australia 30% the respondent, did remember not sleep in ICU during their ICU stay(11). The prevalence of poor sleep in ICU is greater than 50% and increases further complication of the other body system mainly physiological deteriorate faced in critical care (21). Moreover, another research done in Iran using PSQ the prevalence of poor sleep was 55% (22).

In addition, in our continent Africa little research were done, South Africa had done among ICU patients showed that the prevalence of poor sleep quality is 70.6% (2). Additionally in Egypt literature had, done using freedman questionnaire revealed that 48% of ICU patients had poor quality (23). In our country Ethiopia cross-sectional study in Jimma town, residents' prevalence of poor sleep encountered 64.5% (24). However, there is no published literature carried out at a particular area of the ICU patients sleep status in our country.

Due to, many reasons in the ICU environment medical and technical aspects of the care give more attention, meanwhile mental sphere caring largely ignored in the hospitalized patients. This is the big problems that need a solution by respected stakeholders special health facility where care given to provide the services for all patients in holistic manner. Negative health impact of the sleep disturbances associated with admission to ICU has documented in a different study that several organ system is affected by sleep disturbance. These are weak respiratory muscle, myocardial infarction, impaired immunity, and hormonal regulation alteration. These body system consequences can lead to; extend ICU length of stay, increase mortality, and increase health costs (25).

1.3 Significance of the study

This study out looked the sleep problems and identify factors which are directly cause sleep deprivation in ICU patients in this study area. The finding data use for a clear thoughtful of the existence of sleeps abnormality in the study area and would put the appropriate and strategic solving problems methods. This study also important to fulfill the knowledge gap of clinical staffs particularly for nurses by who can incorporate the finding data in their assessment plan that is one part of the sleep care in standards of nursing process enhance better outcomes of the patients. Stakeholders that have the capacity in providing capacity buildings like training would accomplish this all and other supports according to the reporting of the recommendation for each concerning body.

And the policymakers can use the finding information as the input for new establishments or for amending the health policy. Finally, the obtained data can use as the baseline for health researchers, which are not, addressed the problem associated to sleep in the study area. That is why this study aims to show the degree of the sleep abnormality and factors related to sleep quality disturbance with ICU patients specifically located in Addis Ababa.

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Chapter two - Literature Review

A literature search was conducted through databases Google, Scholar, and Pub-Med; using key words that are related to the title in the study (e.g. sleep etiology, factors sleep awaking, severely ill, sleep & ICU). Information that has relevance to the topic used and cited for reference using zotero referencing manager and Vancouver style.

2.1. Prevalence of sleep quality

In Holland, using Freedman questionnaire revealed that 50.1 % had poor sleep quality after hospitalization (26). In Australia, the same questionnaire was used 64% prevalence of poor sleep quality (11). However, in Saudi Arabia research done with similar questionnaire revealed there was nearly the same sleep quality between Home and ICU stay (27). Another study in Egypt had taken by Doaa M. And Magday, show that prevalence of poor sleep quality was 48% in the ICU (23).

Cross sectional study done In Iran using the different questionnaire using Pittsburg sleep quality index shows that greater than (55%) of hospitalized patients had poor sleep quality (22). Study done by Ulla Frisk and Gun Nordstrom they concluded that the patient self rated, they had slept the night very well and some did not sleep at all that decrease the sleep quality in the ICU (28). Actigraphy, Sleep quality Study done in, India by Naik and colleagues, Poor sleep quality was found in 47% of the ICU patients (29)

Another descriptive cross-sectional study in Egypt shows that the prevalence of sleep abnormality was 78.0% in the ICU patients (30). Study in Iran on congestive heart failure patients' sleep indicates that 91.2% had poor sleep quality (31). In china studied by Lei Zhang on 152 parents, shown that the prevalence of poor sleep quality was 46.1% of the ICU patients (32). study done in Canada by Jonathan Y. Gabo that demonstrated admitted patients to ICU experienced much poorer sleep quality compared to that at home(33).

2.2 Related factors of sleep quality

2.2.1 Socio-demographic Factors

The occurrences of poor sleep quality increase with age. Study in China showed that 45.5% in elderly female while 35.8% in elderly male (12). Another literature showed that females more affected by sleep disturbance (25). And in South Africa study show that females were more

affected and Difficult sleeping in aged patients are quietly high than young adults (2). Literature done by Mohsen Adib-Hajbaghery in Iran indicated that poor sleep quality was related with the low education level (22).

2.2.2. Environmental noise

Literature did in different areas is showed that environmental noise the main etiology ICU patients sleep problems. Research did in South Africa showed that 82.4% of participants perceived sleep disturbance by noise mainly sourced from alarms pollution (2). Additional literature collected by Briarwood Bluff NE, that a number of noise source cause sleep disturbance in the ICU (27). In Iran by Mohsen Adib-Hajbaghery had shown that noise was the most cause of sleep disturbance (22). In addition, another study area Iran, from the environmental noise was encountered 49.58% (33) and in Australia by Sahali Bahri, indicated that main cause of sleep problems is environmental noise (11).

Using Pittsburgh Sleep Quality Index in Turkey by Meryem Yilmaz, showed 92.9% the causing sleep upsetting in ICU patients was noise.(34). In Egypt by Doaa M. Magdey, noise is the primary factors affecting ICU patients (23). Literature using Freedman questionnaire in Saudi Arabia revealed that the most source of poor sleep from the noisy environment was heart monitor alarms in the ICU (28). Subjective questionnaire study on the sleep affecting factors in surgical inpatients recognized environmental factors that noise is strongly affect normal sleep (35). According to Hui Xie and colleagues, loud noise accounted for 20.9% of sleep disruption (36).

2.2.3 Light

According to Kamdar literature light plays a great role in influencing the ICU patients' sleep (1). Literature by Fries and coworkers suggested that by modification light could be reduced patients sleep problems that mean light mainly affect sleep problems (37). Yilmaz M did the survey; on sleep affecting factors most frequently stated of poor sleep room light at night, which was accounted 72.0% (34). In Egypt found that the second most environmental factors affected sleep was lightning 90.7% (23).

2.2.4 Patients care activities

Factors influence normal sleep several that enhance patients can be aroused accidentally by sensory or other stimulus. The main factors are environmental sources and patient care behaviors

in the ICU during day and night together judged as sleep quality influential factors (15, 38). In South Africa 50% of the ICU patients reveal, their sleep disturbs due to the ICU activities in routine care of patients (2). Medications administration may also adversely affect sleep patterns in bidirectional (3). Nevertheless, a study done on nurses' perception reported that 56% of nurses would not wake up the patient for any of those patient care interventions (39).

2.2.5 Pain and discomfort

Patients in serious ill may have pain for therapeutic and surgical pathological reason, and these patients subjected to therapeutic actions that are painful as well. In South Africa, the most important factor for sleep deficit in the ICU is pain accounted 91.2% of causing factors and 96% them calmed their sleep troubles after taking the pain relieve medications (2). In addition, in China study on in patients poor sleep quality reported that main causes were physiological problems like toileting 55.8% and 50.9% of discomfort from illness (12). Study done by Elliot et, accomplished as pain was lesser factor than that of others of sleep disturbing factor (13). However, study had taken by Lei Zhang & Yong Sheng Sha on the patients' sleep reported was pain (63.2 %) and coughs (57.9 %) most important factors (40). Literature done by Frisk and Nordstrom reported that 48% of the patients felt nothing as sleep-disturbing factors and 19% of them cited as pain is the commonest factor affecting their sleep (28).

Additionally, Literature by Lewandowska, in Holland, using the freedman questionnaire clearly stated pain is a factor that strong pain position considered as sleep-disturbing factors (27).

Study in Istanbul, Turkey by Ugras and Oztekin revealed that 30.3% respondents perceived toileting as sleep-disrupting factors (40). A study by Mohsen and colleagues in Egypt revealed that 65.1% of the ICU Patients' sleep bothered by too much sweating (30).

2.2.6 Psychological Factors

The study reported the most emotional factors that sleep causal to poor sleep quality were worries about the diseases (12). Another study looking the personal factors as sleep disturbance factor that feeling tension is the most found to disrupt sleep (41) Stress and anxiety due to unfamiliarity with the ICU environment, or acute illness are other factors that should be taken into account (5).

2.2.7 Mechanical Ventilation

Patients on MV had more sleep architecture destruction (5). Clinical review study showed that with ICU patients ranges from 60% to 80% for MV patients and 20% to 50% for none MV patients (19). The sleep quality was greater affected on MV patients 66.7% and less in on none MV patients 33.3% (31). Equipment and events with MV Patient, such as facemasks, end tracheal tubes, suctioning, physical restraints, and Nasogastric tubes are mainly interrupt sleep during the procedural intervention (15). A prospective study by Wang in China showed that MV holds up sleep in ICU patients (21).

2.2.8 Previous hospitalization

Study literature done in Egypt by Doaa M. Magdy, showed that 82% of the ICU with poor sleep was first admission and 18% had history of previous admission (23).

2.9 Conceptual frameworks

This conceptual framework is developed to my context and research interest from bio behavioral models and Spierman's Three-Factors Insomnia nursing theories that incorporate different contribute factors to sleep awaking disturbance, the concept of these models are found in a controlled way in the literature review done by Julie L. Otte andJanet S. Carpenter(42).

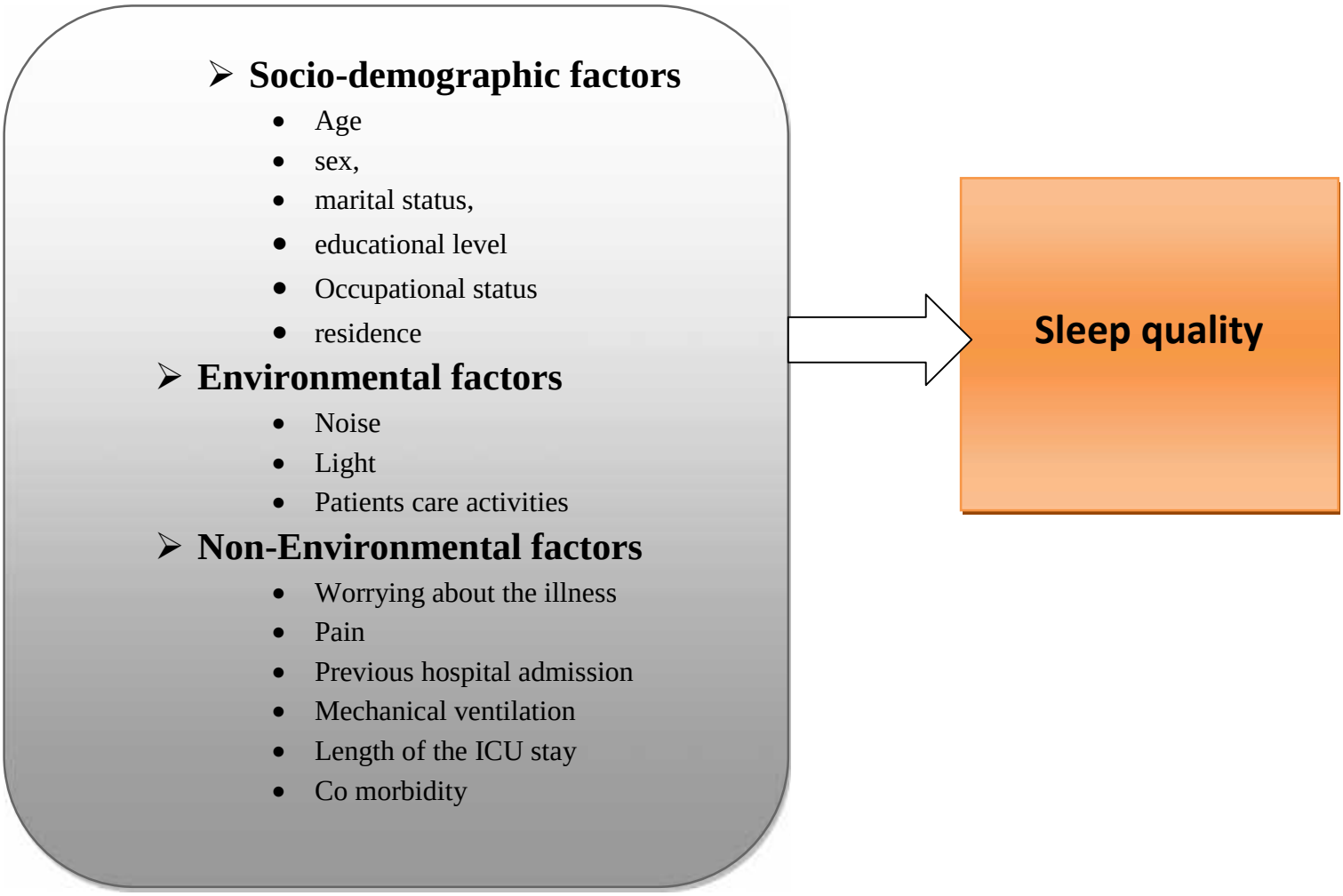


Figure 1 1 Conceptual framework showing the relationship between dependent and independent variables under study.

Chapter 3- Objective

3.1 General objective

To assess sleep quality and associated factors of adult patients admitted in the intensive care unit of three selected hospitals, Addis Ababa, Ethiopia in 2020.

3.2 Specific objective:-

- To assess sleep quality of ICU patients in three selected hospitals.
- To identify factors associated with affecting the sleep quality of ICU Patients in three selected hospitals.

Chapter Four- Methodology

4.1 **Study design**

Prospective Cross sectional study design was deployed.

4.2 Study area

The study conducted at three selected hospitals, namely Tikur Anbasa Specialized Hospital, Alert specialized Hospital, and Saint Peter Specialized Hospital Located in Addis Ababa. These hospitals selected purposely because of high patients' admission to intensive care unit.

Tikur Anbasa Specialized Hospital: - It is a large referral hospital and sees approximately 370,000 patients annually, which is located at Lideta sub city of Addis Ababa. Black Lion Specialized Hospital jointed with Addis Ababa University School of medicine and health science serving as a training center for undergraduate and postgraduate medical students. The ICU has 12 adult beds capacity of about 800 patients' admission per year and has 42 nurses working at ICU.

Alert Specializes Hospital-One of the other specialized hospital, which is located at Kolfe Keranio Sub city of Addis Ababa. Has 273 beds, 11 ICU beds and has 30 nurses working in the ICU.

Saint peter specialized hospital - A large specialized hospital, which is located at Gulele sub city of Addis Ababa. It has 292 total beds and about 700 clinical staffs. In addition, has 10 ICU beds and 20 nurses working in the ICU.

4.3 Study period

The study conducted from October to June 2020.

4.4 Population

4.4.1 Source of population

All admitted patients in three selected hospitals at Tikur Anbasa Specialized Hospital, Saint Peter specialized hospital and Alert hospital.

4.4.2 Study population

All adult patients admitted in Intensive Care Unit during the data collection period at three selected hospitals at Tikur Anbasa Specialized Hospital, Saint Peter specialized hospital and Alert hospital.

4.4 Inclusion and exclusion criteria

4.4.1 Inclusion criteria

- Patients admitted and LOS in ICU $\geq$ two days
- Patients 48 hours after r extubation and off the mechanical ventilation
- Patients whose age $\geq$18 years old
- Patients who are on discharge phase during the data collection period
- Patients who agree to give consent
- Conscious patients who can communicate either by speaking or by writing were included.

4.4.2 Exclusion criteria

- Unconscious patients
- Deep sedated
- No consent
- Incompetent patient
- Traumatic Brain injury
- Had Previous sleep disorder

4.5 Sampling technique

A convenient sampling technique applied to all patients, consenting, who met the inclusion criteria and admitted to ICU during the study period were involved in this study. All participants screened for eligibility criteria every day morning before plan to discharge.

4.6 Sample size determination

From 297 total patients admitted to three hospitals ICU during data collection period 102(34.3%) were included by convenient sampling technique because of they meet inclusion criteria and they agreed to participate in the study after completed the informed consents by data collectors.

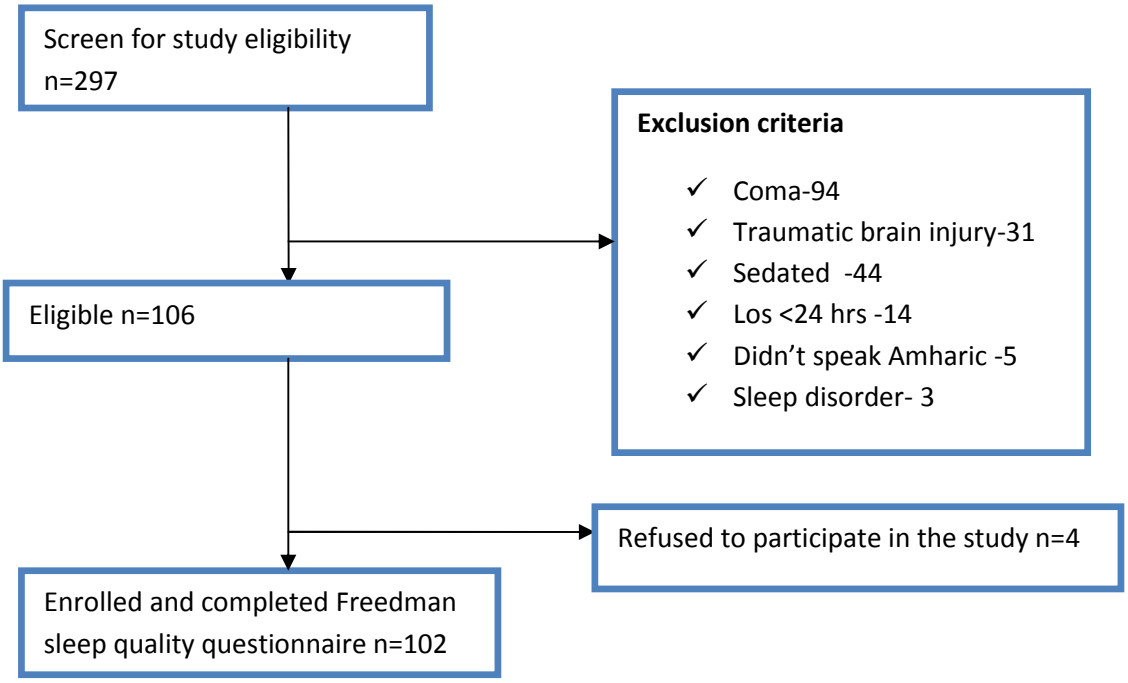


Figure 4 1-diagram of ICU patients' screening, enrollment, and participant in Amharic version of freedman's sleep quality questionnaire completion in the three hospitals ICU at Addis Ababa, Ethiopia, 2020.

4.7 Variables

4.7.1 Dependent variables

- Sleep quality

4. 7.2 Independent variables

- Environmental factors (noise, light, patients care activities)
- Non-Environmental factors (psychological and pathological factors)
- Socio-demographic characteristics (age, sex, marital status, educational level, occupation and residence)
- Previous hospitalization
- Mechanical ventilation
- Length of stay
- Co morbidity

4.8 Operational Definition

1. Sleep quality: - Patient reports that he/she was feeling satisfaction with last night sleep and enough time spent in deep stage sleeping cycling with full awaking.

2. Sleep quantity:-patient report he /she did spent enough time duration during previous sleepiness.

3. Awaking: - Patient report he/she stopped sleeping spontaneously

4. Good sleep quality:- patient report his /her feeling satisfied with the sleep of previous night he/she rate on the freedman sleep quality scale and if rate greater than or equal to 6 consider as good sleep quality.

5. Poor sleep quality: - Patient report he /she did not feeling satisfy with the sleep of previous night they rate on the freedman's' sleep quality scale and if rate less than 6 included as poor sleep quality.

6. Sleep deprivation: - Patient reports he /she did not sleep enough and did not wake up timely.

7. Sleep architecture: - is the structure and pattern of sleep, which encompasses several Variables, such as the amount of time spent in REM and NREM sleep and sleep duration is the total time spent sleep in a 24-hour period.

4.9 Data collection procedure

4.9.1 Instruments

The data was collected using a structured questionnaire that was adapted from Freedman sleep quality questionnaire (43) which was modified by Sahili Bihar (11) after getting permission from the owner. It was self-rated scale and it comprised four main parts; demographic, clinical characteristics, sleep quality components and sleep disrupting factors. All sleep quality items questionnaire had a 10-point scale ranging from 1 (bad) to 10 (excellent) and daytime sleepiness (1= unable to stay awake; 10 = fully Alert) whole ICU stays and on the first day, the midpoint, and the end of their ICU stay. And on a 10-point scale to what extent participants considered Several environmental factors influence their sleep quality to be disturbed (1 = no disruption and 10 = significant disruption). The English version translated to Amharic version and translated back to English for similarity of the idea.

Three nurse researchers from school of nursing, Addis Ababa University, one public health researcher and three experienced ICU nurses from TASH, Alert, and St. Peter specialized hospitals tested validity. They agreed with some comments and recommendation. According to the experts recommendation the questionnaire modified and ensured on understanding of the questions and clearness of the scale. The consistency of instruments tested using Cronbach's alpha coefficient and that freedman's' sleep quality scale (.88) and sleep disrupting factors (.72).

4.9.2 Data collection technique

Before the starting of the study, data collectors selected from each studied hospitals that were working in the ICU and assigned to each study area. Training provided for all data collectors and supervisor that all questions explained for understanding of the contents to give well instruction to the participants. The data collectors assessed the GCS level of each admitted patients every day morning during data collection period to determine the level of consciousness and if they were meet inclusion criteria, they collected the data before discharge from ICU or from recovery room. All participants were given formal consent before they proceed into the study and the participants rated their overall quality of sleep on a 10-point scale ranging from 1 (bad) to 10 (excellent). Participants who were unable to fill the questionnaire due to different reasons like weakness and on tracheotomy the data collectors read the questionnaire loudly to them their response recorded on the scale point. Data collectors recorded clinical and

demographic data; these were included diagnosis, previous admission, length of stay, mechanical ventilation, co morbidity and demographic data age, sex and residence from records the patients' chart, database. Patients recorded level of education, marital status, and occupation.

4.10 Data Quality Assurance

Regular check-ups for completeness and consistency of the data followed on a daily basis. The questioners were prepared in English and Amharic for the improvement of data quality. pilot study of the questionnaires done on population similar to the study population outside the study period before one week of the actual data collection. This ensured clarification of the words and phrases, to keep coherent of the sentences and omit patterns of the questions, to estimate appropriate time to answering the questions and modification made accordingly to the final data collection. It deployed on 15 patients from three selected hospitals ICU. However, the result was not included in the main research result. After quality of questionnaire confirmed, three data collectors and one supervisor trained for 1-day duration. During training, all data collectors were communicated overviews regarding patients' sleep quality its impact on the health care delivery system, about effective data collection methods and ethical issues during data collection. For this tool, the validity and consistency tested with pilot study. By using SPSS for windows version 25.00 Cronbach's alpha was calculated to test internal reliability of sleep quality items and sleep disrupting factors subscale most of the tools scores >0.72.

4.11 Ethical considerations

Ethical clearance obtained from Department of emergency medicine, college of health science, AAU, Written informed consent of the study participants obtained from each study subjects prior to the study by explaining the purpose of the study, and confidentiality of the information was assured and privacy of the participants has maintained.

4.12 Data process and analysis

Data entered using EPI-data version 4.6 and analyzed using SPSS statistical program version 25.0. First, the data assessed for normality using Kolmogorov-Smirnov normality test. Descriptive statics including frequency and percentages computed for categorical variables in the study and demonstrated by tables. Continuous variables expressed by mean and standard deviation. Bar charts were formed using frequency for categorical variables and mean for continuous variables. A chi-square test used for measuring the association of dependent and

independent variables, which were categorical variables. P-value was calculated to ($p<0.05$) would considered statistical significance with two sided significance level was used at 5% and 95% CI. Bivariate analysis done separately with binary Logistic regression identified associated exposure variables for outcome variables. Variables that had statically significant $p< 0.25$ were candidate for forward multivariate logistic regression model to lay out the most significant variables that were relative contribution on sleep quality.

4.13 Dissemination of findings

After presenting the study result, the finding disseminate to concerned bodies. The primary objective of this study is for partial fulfillment in the requirements to degree of master in Emergency medicine and critical care nursing; the result submitted to Addis Ababa University Emergency medicine department. It also the result submitted to service providers, policy makers and other concerned stakeholders. With further communication with publisher, I will try to present the research output to the public.

Chapter 5- Result

5.1 Socio demographic and clinical characteristics

Total of 297 patients, were admitted to three hospitals ICU. Of who 191 excluded from, the study due to they did not meet inclusion criteria. The left over 106 patients met inclusion criteria, but, 4 patients were refusal to participate in the study and 102 were patients take part of this study. Of these, the mean age of participants was 44.96±13.56 years and the majority of 52.9% was females and while 47.1% was male. More than half 53.9% were married. Concerning educational level, 32.4% graduated from college followed by secondary school, which is accounted 21.6%. Majorities of this study subject occupation were merchants (32.4%) and 26.5% were employees. Moreover, 63.7% of this study subjects are living in urban

Of the study, sample 74.5 % patients had no history of ICU admission and the major ICU admission reasons were medical respiratory, post operation and medical cardiac problems that are accounted 36.3%, 26.5%, and 11.8% respectively. In addition, 40.2% of the patients were on mechanical ventilator therapy and 33.3% of study subjects had co morbidities. Average length of ICU stay of the participants was 5.72 days ±2.37 SD. Table 1 provides a summary of study sample socio demographic and clinical characterizes.

Table 5 1 Socio demographic and clinical characteristic of study subject in the Intensive Care Unit of selected hospitals in Addis Ababa, Ethiopia, 2020.

Characteristics N=102	Category	Frequency N (%)	Min	Max	Mean±SD
Age			19	68	43.30±13.72
Sex	Female	54(52.9)			
	Male	48(47.1)			
Marital status	Married	55(53.9)			
	Unmarried	37(36.3)			
	Others	10(9.8)			
Educational level	Read and write	20(19.6)			
	Primary school	27(21.5)			
	Secondary school	22(21.6)			
	College graduated	33(32.4)			
Occupation	Housewife	19(18.6)			

	Employee	27(26.5)			
	Student	12(11.8)			
	Merchant	33(32.4)			
	Others	11(10.8)			
Residence	Urban	64(62.7)			
	Rural	38(37.3)			
Previous ICU admission	Yes	26(25.5)			
	No	76(74.5)			
Worrying	Yes	80(78.4))			
	No	22(21.6)			
Length of stay in ICU			3	14	5.72±2.37
ICU admission reason	Medical respiratory	37(36.3)			
	Medical cardiac	12(11.8)			
	Post operation	27(26.5)			
	Thoracic trauma	11(10.8)			
	Abdominal trauma	9(8.8)			
	Others	6(5.9)			
Mechanical ventilation	Yes	41(40.2)			
	No	61(59.8)			
Co morbidity	Yes	34(33.3)			
	No	68(66.7)			
Other others =AKI, DKA and electrolyte imbalance- in marital, widow and divorced					

5.2 Prevalence of sleep quality

The majority of study nearly two third of participants (63.7%) were suffered from poor sleep quality that were admitted in the ICU and 36.3% participants were reported as good sleep quality after admitted in ICU. However, most participants about 74.5% of the study subjects reported good sleep quality at home. Therefore, this study demonstrated that sleep quality in the ICU that mean score of sleep quality was 4.91±1.118 that significantly low compared with mean score of sleep quality was 6.33±1.245 at home (p=0.002). Generally, there was stastically significant between sleep quality at home and ICU after admission whereas (p=0.001). The mean score of sleep quality in the first day night of ICU admission was 4.38±1.357 which is statically significant (p=0.038) and 4.86±1.421 at the end of ICU stay which is not significant (p>0.05). There was a significant negative relationship between sleep quality and daytime sleepiness, r=-.512, p= 0.00.

Regarding to environmental related self reported factors which affect sleep quality among ICU patients, it was demonstrated that the most significant factors were noise, pain , light and doctors/nurses activities which mean score of the factors were 6.6±1.270, 5.57± 1.270, 5.10± 1.570 and 5±1.61 respectively. It showed the summary in figure 3. Also regards noise related sleep disrupting factors it observed most significant noise factors were cardiac and ventilators alarm, conversation and phone calling. Noise related factors displayed on figure 4.

5.3 Sleep quality Associated factors

According to Pearson correlation coefficients there was significant positively correlation between sleep quality and age (r=0.534), p=0.00, history of ICU admission (r=0.635, p=0.001) and marital status (r= 0.470, p= 0.001). However, significant negative correlation between sleep quality and day time sleepiness (r= -0.347, p=0.00), presence of co morbidity (r= -0.360,p= 0.000), mechanical ventilation therapy (r= -0.244, p= 0.013), length of ICU stay (r= -0.799, p= 0.00), and worrying (r= 0.853, p=0.000) were found that negatively correlated associated factors

In binary logistic regression socio demographic and clinical variables like; age, sex, previous history of hospital admission, presence of co morbidity, mechanical ventilation therapy, marital status, worrying, day time sleepiness and length of ICU stay were associated with sleep quality in the Intensive Care Unit (P <0.25)**.** By step wise analysis all variables which had p< 0.25 in the binary analysis were included in the multivariable logistic regression for enter logistic regression model and in the final steps there were Six variables identified to be the most statically significant. Accordingly, length of stay, worrying, previous admission history, mechanical ventilation, daytime sleepiness and marital status particularly married reported statically significant with poor sleep quality. Summary data stated **in table 3**.

Table 5 2: Self reported Sleep quality components among patients in selected hospitals ICU, Addis Ababa, Ethiopia 2020.

Variables N=102	Min	Max	Mean ±SD	p-value	CI 95%	
					Lower	Upper
Sleep quality in home	3	9	6.33±1.245	0.002*	0.378	0.810
Sleep quality in ICU	2	7	4.92±1.346			
Over all ICU sleep quality in the following days						
First night in the ICU	2	8	4.38±1.357	0.138*	.139	.945
Middle night in the ICU	2	7	4.73±1.136	0.541	.094	2.397
End day in the ICU	2	8	4.86±1.421	0.405	.632	3.119
Over all degree of day time sleepiness	2	7	5.05±1.075	0.000*	0.109	.421
First day time sleepiness	2	8	4.91±1.298	.270	.120	1.196
Middle day time sleepiness	1	7	5.00±1.328	0.304	0.207	1.116
End day time sleepiness	1	8	5.07±1.366	0.660	0.186	2.600

Data expressed by mean and standard deviation. * p <0.25

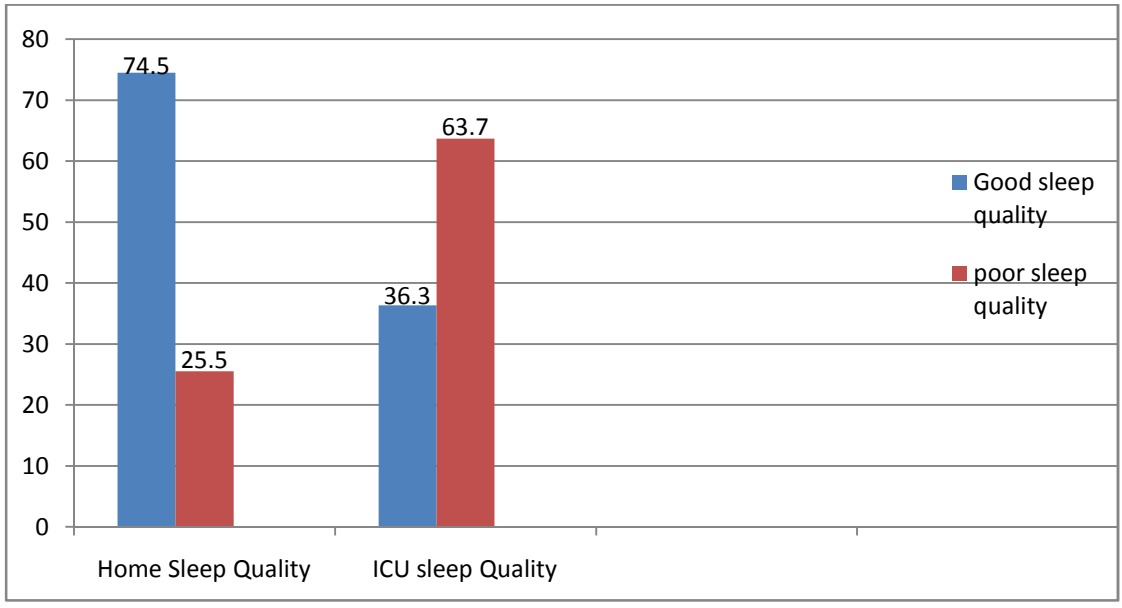
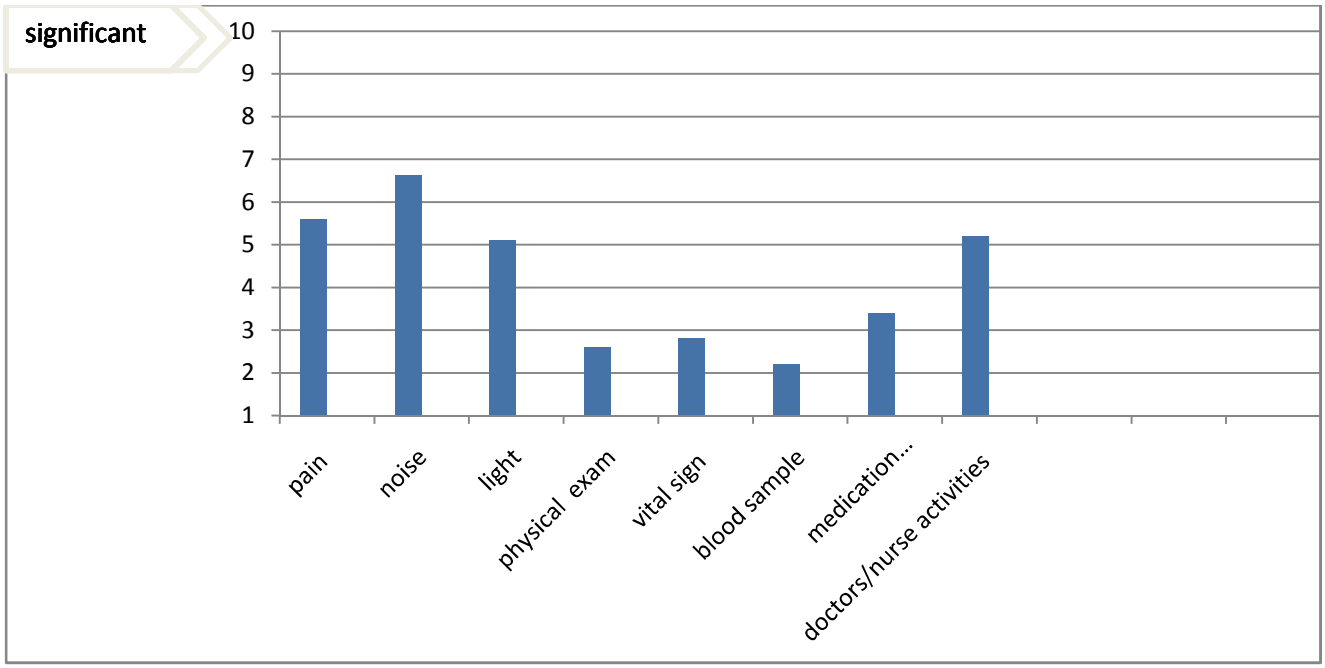
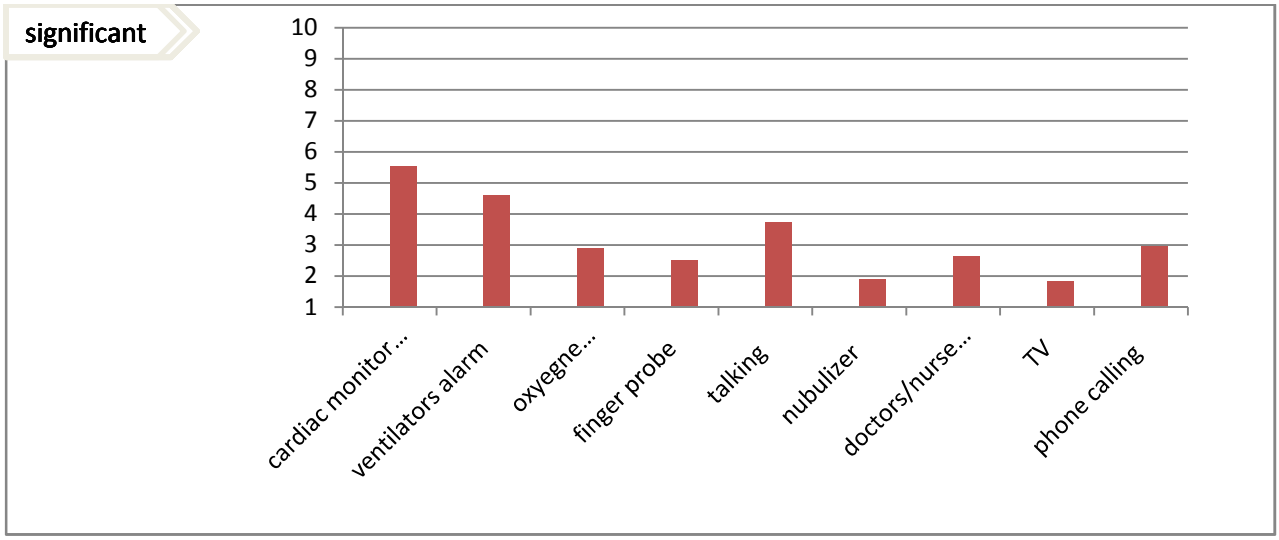


Figure 5 1: Comparison patient has perceived Sleep quality between Home and Intensive Care Unit Addis Ababa, Ethiopia, 2020.



1=none significant and 10 =significant sleep disrupting factors

Figure 5 2: Mean of patient's perception on sleep disruptive factors among adult ICU in Addis Ababa, Ethiopia, 2020.



Noise disruptions rated on a scale of 1 = no disruption to 10 = significant sleep disruption.

Figure 5 3: Mean of patient's perception on noise sleep disruptive factors among adult ICU in Addis Ababa, Ethiopia, 2020.

Table 5 3: Association between independent variables and poor sleep quality among sampled adult ICU patients of three selected hospitals in Addis Ababa, Ethiopia, 2020.

Variables		Sleep quality		Bi variable- result		Multivariable-result	
		Good sleepers	Poor sleepers	p-value	COR(95% CI)	p-value	AOR (95% CI)
Age				.000*	1.112(1.064, 1.163)	0.207	1.4(0.879, 3.034)
Sex	Female	20.4(11)	79.6(43)	.001*	4.620(1.931, 11.053	0.150	.89(0.583, 4.231)
	Male	54.2(26)	45.8(22)				
Marital status	Married	12.7(7)	87.3(48)	.002*	10.286(2.311,45.781)	0.012**	1.6(1.143,15.231)
	Unmarried	64.9(24)	35.1(13)	.777	.812(.194, 3.409)	0.210	0.53(0.347, 2.470)
	Others	60.0(6)	40(4)				
Previous ICU admission	Yes	88.5(23)	11.5(3)				
	No	18.4(14)	81.6(62)	.000*	.029(.008, .112)	0.001**	2.10 (1.932, 23.103)
Worrying	Yes	5.8(3)	94.2(49)	.000*	7.20(2.862, 18.113)	0.042**	2.6(0.298, 0.926)
	No	89.5(34)	32(16)				
Length of stay in ICU				.000*	.081(.025, .265)	0.014**	0.87(0.361, 0.875)
ICU admission reason	Medical respiratory	18.9(7)	81.1(30)	.003*	38.0(3.374, 427.95)	0.441	1.2(0.439, 62.032)
	Medical cardiac	58.3(7)	41.7(5)	.554	.571(.090, 3.641)	0.390	0.38(0.471, 19.201)
	Post operation	40.7(11)	59.3(16)	.838	1.182(.238, 5.864)	0.573	0.12(0.312, 11.021)
	Thoracic trauma	54.5(6)	45.5(5)	.391	.429(.062, 2.972)	0.261	0.62(0.451, 3.761)
	Abdominal trauma	44.4(4)	55.6(5)	.391	.429(.062, 2.972)	0.621	0.15(0.752, 8.043)
	Others	33.3(2)	66.7(4)				
Mechanical ventilation	Yes	22.0(9)	78.0(32)	.016*	3.017(1.233, 7.381)	0.020**	1.8(.035,.864)
	No	45.9(28)	54.1(33)				
Co morbidity	Yes	11.8(4)	88.2(30)	.001*	7.071(2.247, 22.256)	0.108	0.870(.617, 87.102)
	No	48.5(33)	51.5(35)				
First night in the ICU				0.138*	.752(.139, .945)	0.452	1.5(0.625, 6.371)
Day time sleepiness				.001*	.451(.281, .724)	0.031**	1.2(2.924, 23.190)

* p value < 0.25, *stastically significant ** p-value < 0.05 ,others =AKI, DKA and electrolyte imbalance, in marital widow and divorced

Chapter 6- Discussion

This study conducted to identify sleep disturbance factors and to assess sleep quality among admitted conscious adult patients in the intensive care unit. Therefore presented study brought the evidence of hospital admission in the Intensive care unit was negatively affect sleep quality, it was found patients who were admitted in the ICU Suffered with poor sleep quality, that the sleep disturbance was associated with patients related factors, health professionals activities and ICU environment factors. The majority of this study nearly two third of participants (63.7%) were suffered from poor sleep quality that were admitted in the ICU. The result almost similar with study done in Australia, by Sahli Bari, with the same questionnaire was used 64% prevalence of poor sleep quality (11). However, this finding is greater than study done in Holland; using similar questionnaire revealed that 50.1 % had poor sleep quality after hospitalization (26). The gab may be due to in the current study, ICU patients have not private room.

Regarding to the marital status in this study sample majority was married adults that reported poor sleep quality than being unmarried persons that being married 1.6 times high risk to have poor sleep quality. This was different with study done by Mohsen Adib-Hajbaghery who found that sleep quality was better in married older adults than unmarried and divorced(22). The gab might be due to being familial and social interaction in the current study more strong than other world. This issue may be negatively affecting the sleep quality.

Previous history of hospitalization was one of the significant factors associated with negatively effect on the sleep quality in this study. I found that probability of having good sleep quality was more in participants who had history of previous hospitalization than not admission history. This results showed that patients who had no previous admission 2.1 times more risk to reveal poor sleep quality than had admission history. This finding is contrast with both studied by Moaa M.Magdy (23), who reported ICU admission experienced had poor ICU sleep quality which was supported by Adib, in Iran who reported that previous hospitalization reduced sleep quality in the ICU(22). The difference may be due to ICU environment setup, structural of the room and personal difference to abilities of adaptation to the hospital environments indifferent area. Nature of individual may be the reason to be variation. It needs further study on the history of ICU admission effect on sleep quality.

The current study brought evidence that mechanical ventilation was significant relation with sleep quality that patients were ventilated 1.7 times more likely to have poor sleep quality than none ventilated patients. This finding was supported studied by Wang et.(21) who revealed that mechanical ventilation hold up sleep quality of the patients in ICU. Study by Delaney Ll. and coworkers agree with my study that showed that with ICU patients about 60% to 80% for MV patients had poor sleep quality this greater than none ventilated patients (19). This may be due to different procedures on the MV patients that were suctioning discomfort and alarms alert the sleep state.

This current study demonstrated that sleep quality had stastically significant relation with sleep quality and length of ICU stay that found if duration of increase there was better, good sleep quality in the ICU. However, previous studied by Adib, iran, who reported that no significant relationship between duration of ICU stay and sleep quality (22). The reason of this difference may be due to different study design of different study area. Also worrying was another significant factor affecting sleep quality in ICU in this current finding. This was 2.6 times risks to poor sleep quality for patients worrying for their illness. This agreed with Lei in China (12) who showed that an emotional factor as if worrying about illness was significant on sleep quality. This may be due to increase sympathetic stimulation and raise level of Noradrenalin in plasma that altered physiological activities leads to sleep disturbance.

This study result revealed that ICU patients reported poorer sleep quality than at home. This indicated hospitalization negatively affected on the sleep quality. This was consistent with study by Sahli Bari, who showed that sleep quality at home was better good sleep quality than sleep quality in the ICU, which was low sleep quality after hospitalization (11). Regarding to the daytime sleepiness it was significant relation, which was negatively, affected the overnight sleep quality in this study that increasing day times sleepiness was 1.2 times more likely to reduction sleep quality. However, in previous study by Adib, Iran, who demonstrated that there was no significant relationship with sleep quality (22).

I used tool to evaluate subjectively the environmental sleep disrupting factors In the ICU, that resulted noise was the first most sleep disrupting factors among ICU patients, that the main source of noise factors in the ICU were cardiac and ventilation alarms, conversation among staff during overnight activities while caring critical care. This finding was in line with Doaa M.(23)

who reported that the first sleep disrupting factor was noise. However, the current study was contrast with Freedman and colleagues (43) that found the most disrupting factors of sleep pattern were phlebotomy and vital sign assessment; these were least contributing factors in current study. Moreover, noise of television, doctors/nurse pages, and nebulizer were least source of noise in my present study. Another factors demonstrated in this study were pain, light and doctors/nurse intervention activities in the ICU disturbing sleep quality of the patients. This finding was similar with Doaa M.(23)who showed that continuous lighting of the room was the second contributing factors in the sleep disturbance and Ugnas and Ozekine who revealed that nursing activities were contributed the ICU patients sleep disturbance(40). In addition, this finding was similar with Kamdar who demonstrated that light play great play in sleep disrupting of ICU patients (1). Pain was the second sleep disrupting factors in this study, which it was concordance with study by Lowndoska, who showed that pain was in strong position of sleep disturbance of patients (26).

Limitation

There are numerous limitations to my study. The topic of sleep quality in the ICU in Ethiopian hospitals is not documented area. This study should consider as groundwork study; it focuses on three hospitals and does not symbolize the wide range of hospitals in Addis Ababa. The study was entirely subjective and possible recalling bias in my sample, due to there is no any self recorded daily sleep quality of the patients. There are many factors that I did not take consideration in my study like severity of the illness, medication, physiological factors, all of this factors need to be studied by other researchers

Conclusion

It is obvious that hospitalized patients are suffered from poor sleep quality in the ICU. Therefore, there are many environmental and intrinsic factors contributing for disturbing sleep quality in ICU identified. These are Noise, Pain, light and doctors/nurses intervention activities in the admitted patients are the most sleep disturbance contributing factors. In addition, the main sources of noise are cardiac monitor and ventilator alarm noise and noise from conversation are noise sleep factors in the ICU.

Recommendation

- ✓ Design daily sleep quality assessment tool and incorporate in the nursing care plan
- ✓ Educate and train the ICU staffs to reduce sleep disturbance factors in ICU.
- ✓ Wear the patient's eye goggles to minimize ICU room light and apply earplugs to reduce ICU environment sound pollution.
- ✓ Properly manage patients pain
- ✓ Doctors and nurse should not talk about the patients within hearing distance of other patients
- ✓ Nurse should enhance patients comfort by providing psychological reassurance.
- ✓ I recommend conducting research on this study by large sample size and using objective assessment tools.

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Annex: Questionnaire

I. Study Information sheet

Identifying the factors affecting the sleep quality of ICU is important. You are kindly invited to participate in the study entitled "Assessment of sleep quality and associated factors among adult patients admitted to ICU in Three selected Hospitals, Addis Ababa, Ethiopia". The research will help us understand the factors associated with a patient's sleep quality among ICU patients.

Title; "Assessment of sleep quality and associated factors among adult patients admitted in ICU of Three selected Hospitals, Addis Ababa, Ethiopia,". **Importance of the study:** This study is planned to generate information on factors associated with patients' sleep quality in intensive care unit patients' of selected hospitals that can be used to draft strategically health problems solving intervention.

Procedure: patients who are admitted to ICU are sequentially enrolled in the study and questionnaires will be self-administrative with patients and personal characteristics administered by data collectors from the patients' chart who fulfill the criteria. The completion time is about 20 minutes.

Risks and benefits of the study: By participating in this study, and answering our questions, you will not receive any direct benefit. However, you will help to increase our understanding of the needs of the patients in ICU. We hope that the results of the study will improve and make more acceptable the services currently available to you. Your participation in this study will not involve any risks to you.

Rights: Your participation in this study is voluntary and you have the right to refuse to participate or to answer any questions that you feel uncomfortable with. If you change your mind about participating during the course of the study, you have the right to withdraw at any time. The decision not to participate will not affect any aspects of your social life, any future medical care you should require or any other benefits to which you would be entitled. If there is anything that is unclear or you need further information, you feel free to ask any questions.

Confidentiality: Your name will not be written and provide as sincere answers as you possibly could. The information that you provide during the study will be kept confidential. Only the

researchers will have access to the questionnaires and the information that you provide. If you have any questions during filling the questioner you can ask.

II. Informed consent form

I have got sufficient information thorough description of the study entitled "Assessment of sleep quality and associated factors among adult patients admitted in ICU of Three selected Hospitals, Addis Ababa, Ethiopia" by reading the information sheet. I know that I can refuse to participate in the study without penalty or loss of benefit to which I would have been otherwise entitled. I have the right to withdraw from this study any time I want, without any negative impact on me. Hereby, I voluntarily participate in this study.

Signature: _____ Date: _____

Note :-

Some of patients' information taken from the patient charts by the data collectors.

Take time and choose comfortable time to answer responsibly

Answer the question alone

Do not write your name on the paper

Put a like ☑ on the space provided and for job satisfaction encircle it

If there is ambiguity, ask the assistant for clarifying a question

Don't tick more than for a single question

Part one -Personal information (some are will be recorded from the patients chart)

1. Age ----------

2. Sex Male ☐ female ☐

3. Marital status

Married ….……..…… ☐

Single ……..……..……..☐

Divorced ……...…….……☐

Widowed ……..…☐

4. Educational level

Illiterate ☐

Primary school ☐

High school ☐

Graduated from college ☐

5. Occupation

Housewife/not work ☐ Retired Worker ☐ Employee ☐ Student ☐

6. Residence

Urban☐ Rural ☐

7. Previous ICU admission

Yes ☐ No ☐

8. Length of stay in ICU ----------

9. Medical diagnosis ----------

10. Mechanical ventilation therapy

Yes ☐

No ☐

11. Do you Worries about illness

Yes ----

No ------

12. Comorbidity

Yes ☐

No ☐

1	Rate the overall quality of your sleep at home. Use a scale of 1–10 (1 = poor, 10 = excellent)	1 2 3 4 5 6 7 8 9 10
2.	Rate the overall quality of your sleep in the ICU Use a scale of 1–10 (1 = poor, 10 = excellent)	1 2 3 4 5 6 7 8 9 10
3.	Rate the overall quality of your sleep in the ICU on the following days (1 = no sleep, 10 = excellent) ✓ On the 1st night in the ICU ✓ During the middle of your ICU stay ✓ At the end of your ICU stay	 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10
4.	Rate the overall degree of daytime sleepiness during your ICU stay (1 = unable to stay awake, 10 = fully alert and awake)	1 2 3 4 5 6 7 8 9 10
5.	Rate the overall degree of daytime sleepiness during your ICU stay on the following days (1 = unable to stay awake, 10 = fully alert and awake) • On the night in the ICU • During the middle of your ICU stay • At the end of your ICU stay	 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10

2. English Version sleep related questionnairie

S.No		Score
6	Rate how disruptive the following activities were to your sleep during your ICU stay (1 is no disruption, 10 significant disruption)	
	• pain	1 2 3 4 5 6 7 8 9 10
	• noise	1 2 3 4 5 6 7 8 9 10
	• Light	1 2 3 4 5 6 7 8 9 10
	• Diagnostic test	1 2 3 4 5 6 7 8 9 10
	• Vital sign measurement	1 2 3 4 5 6 7 8 9 10
	• Blood sample taking	1 2 3 4 5 6 7 8 9 10
	• Administration of medication	1 2 3 4 5 6 7 8 9 10
	• Doctors /Nursing intervention	1 2 3 4 5 6 7 8 9 10
7	Rate how disruptive the following noises were to your sleep during your ICU stay (1 is no disruption, 10 significant disruption)	
	▪ Heart monitor alarm	1 2 3 4 5 6 7 8 9 10
	▪ Ventilator alarm	1 2 3 4 5 6 7 8 9 10
	▪ Oxygen	1 2 3 4 5 6 7 8 9 10
	▪ Finger probe	1 2 3 4 5 6 7 8 9 10
	▪ Talking	1 2 3 4 5 6 7 8 9 10
	▪ Nebulizer	1 2 3 4 5 6 7 8 9 10
	▪ Doctors/nurses papers, pagers, and phones	1 2 3 4 5 6 7 8 9 10
	▪ Television	1 2 3 4 5 6 7 8 9 10
	▪ Beside phone	1 2 3 4 5 6 7 8 9 10

-The questionnaire used in the study Questions 1 to 5 assess sleep quality and daytime sleepiness. Question 6 assess perceived sleep disruption causing factors. Question 7assess sleep disruption caused by environmental noises.

አባሪ፡ - ማጠይቅ

የ ጥናት መረጃ ወረቀት :- ከፍተኛ እንክብካቤ ክፍል የእንቅልፍ ጥራት ላይ ተጽዕኖ የሚሳደሩትን ምክንያቶች መለየት አስፈለጊ ነው፡፡ ሆስፒታሎች ፣ አዲስ አበባ ፣ ኢትዮጵያ ፣ ከተመረጡሆስፒታሎች የኢሲአይ. ጥናቱ ከታካሚየእንቅልፍ ጥራት ጋር የተዛመዱትን ምክንያቶች ለመረዳት በ ICU ህመምተኞች መካከል ይረዳናል፡፡

ርዕስ; “በአዋቂ ህመምተኞች መካከል የእንቅልፍ እና የእንቅልፍ ጥራት ላይ ተፅእኖ የሚሳደሩትን ምክንያቶች መመርመር አዲስ አበባ ፣ ከተመረጠሆስፒታሎች ወቅጥገብዘዋል፡፡

የ ጥናቱ አስፈላጊነት-ይህ ጥናት የታካሚውን የጠፍ ችግር ሕክምና ጣልቃገብነት ለመቅረፍ ሊያገለግል በሚችል የታካሚያእንቅልፍ ጥራት ወቅጥ ከታካሚዎች የእንቅልፍ ጥራት ጋር ተያያዥነት ያላቸውን ምክንያቶች ለማጣጠቅ የታቀደነው

ሥፃ -ስርዓት-ወደ - ከፍተኛ እንክብካቤ ክፍል የተቀበሉት ህመምተኞች በጥናቱ በቅደምተከተል የተመዘገቡእና ማጠይቆችን የሚሟሉ በታካሚዎች ሰንጠረዥመረጃ አሰባሳቢዎች ከሚጠቅ ህመምተኞች እና የግል ባህርይ ጋር ሪሳቸውን ማስተናገድይሆናሉ፡፡ የማጠቃቀያወጊዜ 20 ደቂቃያህልነው።

የጥናቱ ስጋት እና ጥቅሞች በዚህ ጥናት ወቅጥ በመሳተፍ እና ለጥያቄዎቻቸን መልስ በመስጠት ምንምቀጥተኛ ጥቅምአያገኝም፡፡ ሆኖምበከፍተኛ እንክብካቤ ክፍልወቅጥ የሕመምተኞች ፍላጎቶች ያለንን ግንዛቤ ለማሳደግ ይረዳሉ፡ የጥናቱ ዉጤቶች አሁን ያለዎትን አገልግሎቶች ይበልጥ እንደሚሻሻሉ እና የበለጠ ተቀባይነት እንደሚገኙተስፋእናደርጋለን። በዚህ ጥናት ወቅጥ ያለዎት ተሳትፎለእርስዎ ምንም አደጋ አያስከትልም፡፡ **መብቶች**-በዚህ ጥናት ወቅጥ ያለዎት ተሳትፎ በፈቃደኝነት ሲሆን እርስዎ ለመሳተፍ እምቢየማለትምሆነ ጥያቄዎ የሚሰሙት ማንኛውንም ጥያቄ የመመለስ መብት አልዎት ፡፡ በጥናቱ ወቅት ስለ መሳተፍ ሀሳብዎን ከቀየሩ በማንኛውምጊዜ የመውጣመብት አልዎት ፡፡ ላለመሳተፍ የቀረበውወሳኔ በማነበራዊ ኑሮዎ ላይ ፣ በየትኛውም የወደፊት የሕክምና እንክብካቤ ወይም እርስዎ ብቁ ለሆኑ የሚሉ ሌሎች ጥቅሞችን አይመለከትም፡፡ ግልፅ ያልሆነ ነገር ካለ ወይምተጨማሪ መረጃ ከፈለጉ ፣ ማንኛውንምጥያቄ ለመጠየቅ ነፃነት ይሰማዎታል፡

ምስጠራዊነት-ስምህ አይጻፍምእናምበተሻለዎት መጠን ልባዊ መልሶችን አይሰጥም፡፡ በጥናቱ ወቅት የሰጡት መረጃ በምስጠር ይያዛል ፡፡ ለጥያቄዎች እና ለሚቀርቧቸውመረጃዎች ተመራማሪዎቹ ብቻ መድረስ ይችላሉ። ጠያቂውን በሚሞሉበት ጊዜ ማንኛቸውምጥያቄዎች ካለዎት መጠየቅ ይችላሉ፡፡

II. የ*መ*ረጃ ቅጽ

የመረጃ ሙረቀቱን በማበብ ሆስፒታሎች. ወቅጥ ተቀባይነ ት ባላቸወየ አዋቂ ህመሞተኞች መካከል የእንቅልፍ እና የእንቅልፍ ጥራት ላይ ተጽዕኖ የሚሳደሩትን ምክንያቶች መ ማ ም የመረጃ ሙረቀቱን በማበብ በቂ መረጃ አግኝቻለሁ፡ ፡ ፡ በእኔ ላይ ምንምዓይነ ት አሉታዊ ተጽዕኖ ሳያኖርብኝ ከዚህ ጥናት በፊለግከበት በማኛወም ጊዜ የመላስ መብት አለኝ ፡ ፡ በዚህ መሠረት እኔ በፈቃደኝነ ት በዚህ ጥናት እሳተፋለሁ ፡ ፡ ፊርማ _____ ቀን: - _____

ክፍል አንድ-የ ግል ባህሪዎች መጠይቅ

ማ ስታዎሻ፡ -የ ሚከተሉት መረጃዎች ከተራ ቁጥር 1 እስከ ተራ ቁጥር 8 በ ቃለ መጠይቅ ወይምበህመሞተኛወየ ሚሞሉ ሲሆን ከተራ ቁጥር 9 እስከ 13 ያሉት ከህመሞተኛወካርድበባለሙያ የ ሚሞላ ነ ው ፡

1. ዕድሜ----------

2. ፆታ 1. ሴት

2. ወንድ

3. የ ጋብቻ ሁኔ ታ

1. ያገ ባ/ች… …… .. ……

2. ያላገ ባ/ች… …… .. …… .. ……...

3. የ ተፋታ/ች …… …… ……

4. ባሏ/ሚስት/ የ ሞተ ……

4. የ ትምህርት ደረጃ

1. ማበብ መጻፍ እችላለሁ

2. የ መጀመሪያ ደረጃ ትምህርት በት ያጠቀቀ

3. የሀለተኛ ደረጃ ትምህርት ቤት ያጠቀቀ

4. ከኮሌጅ/ዩኒቨርሲቲ ተመርቋል

5 የስራ አይነ ት /

1. የቤት እመቤት

2. የመንግስት/የግል ተቀጣሪ

3. ተማሪ

4. የግል ንግድ ዘርፍ

6. የሚኖሩበት ቦታ

1. ገጠር

2. ከተማ

7. ከዚህ በፊት በጽኑ ታመው ለህክምና ከፍተኛ እንክብካቤ ክፍል ገብተውያወቃሉ;

1. አዎ

1	በቤትዎ ወስጥ የእንቅልፍዎን አጠቃላይ ጥራት ደረጃ ይስጡ፡ የ 1-10 ሚዛንን ይጠቀሙ(1 = ደካማ፣ 10 = እጅግ በጣም ጥሩ)	1 2 3 4 5 6 7 8 9 10

2. አይ

8. ስለህመምዎ ይፈሌ,ቃሉ;

1. አዎ

2. አይ

9. በከፍተኛ እንክብካቤ ክፍል ወስጥ የቆይበት ጊዜ ----------

10. ሆስፒታል የገቡበት ምክንያት/ህመምአይነ ት

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2.	ከፍተኛ እንክብካቤ ባለበት ክፍል ወቅጥ የእንቅልፍዎን አጠቃላይ ጥራት ደረጃ ይስጡከ1-10 ሚዛን ይጠቀሙ(1 = ደካማ፣ 10 = እጅግ በጣምጥሩ)	1 2 3 4 5 6 7 8 9 10
3.	በሚቀጥሉት ቀናት በ ICU ወቅጥ ያለውየእንቅልፍዎ አጠቃላይ ጥራት ደረጃ ይስጡት (1 = እንቅልፍ የለም፣ 10 = እጅግ በጣምጥሩ እንቅልፍ) o በአሰያ የመጀመሪያ ቀን እንቅልፍዎ o በአሰአይ መካከለኛ ቀን ቆይታዎ ወቅት o በአሰአይ ቆይታዎ መጨረሻ ቀን	1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10
4.	በ ‹አይሰያ› ቆይታጊዜ አጠቃላይ የቀን እንቅልፍ ደረጃዎትን ደረጃ ይስጡ (1 = ንቁ መሆን አለመቻል ፣ 10 = መሉ ንቁ እና ንቁ)	1 2 3 4 5 6 7 8 9 10
5.	በሚቀጥሉት ቀናት በ ‹ICU› ቆይታ ጊዜ አጠቃላይ የዕለታዊ የቀን እንቅልፍ ደረጃን ደረጃ ይስጡ(1 = ንቁ መሆን አለመቻል ፣ 10 = መሉ ንቁ እና ንቁ) • በአሰያ የመጀመሪ ቀን ቆይታዎ የቀን እንቅልፍ ደረጃ • በአሰያ መካከለኛ ቆይታዎ ወቅት የቀን እንቅልፍ ደረጃ • በአሰያ የመጨረሻ ቀን ቆይታዎ የቀን እንቅልፍ ደረጃ	1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10

11. ሜኒካል የአየር መንገፈሻ ሕክምና የሀኔታ
    1. አዎ
    2. አይ
12. ተጨማሪ በሽታአምጪሀኔታ co morbidity
    1. አዎ
    2. አይ

ክፍል ሀለት ፤ - የ ፍሪደማን የእንቅልፍ ጥራት መጠይቅ

6	የሚከተለው እንቅስቃሴ በ ‹አደሰይ› ቆይታዎ ወቅት ምን ያህል እንቅልፍዎን ይረብሸዎት እንደነበረ ደረጃ ይስጡ(1 ረብሾ የለም፣ 10 ከፍተኛ ረብሾ)	
	• ህመም	1 2 3 4 5 6 7 8 9 10
	• ሳል/ደም ጭ	1 2 3 4 5 6 7 8 9 10
	• የክፍሉ ብርሃን	1 2 3 4 5 6 7 8 9 10
	• የአካል ምቾማጉ	1 2 3 4 5 6 7 8 9 10
	• አስፈላጊ የግፊት፣ የመቅት፣ የልብምት እና ትንፋሽ ልኬት	1 2 3 4 5 6 7 8 9 10
	• የደም ናሙና መወሰድ	1 2 3 4 5 6 7 8 9 10
	• መድኃኒት መላጠት	1 2 3 4 5 6 7 8 9 10
	• በዘኪም /በነ ርሶች መቅስቀስ/ ጣልቃመግባት	1 2 3 4 5 6 7 8 9 10
7	የሚከተለውጠዉት /ደምጭ ከሚጥሩ በ ‹አደሰይ› ቆይታዎ ወቅት ምን ያህል ይረብሸዎት ነበር (1 ረብሾ አይደለም፣ 10 ከፍተኛ ረብሾ)	
	o የልብመቆጣጠሪያ ማሽቂያ ደወል	1 2 3 4 5 6 7 8 9 10
	o የአየር ማፍሰሻ ማሽቂያ ደወል	1 2 3 4 5 6 7 8 9 10
	o አክስጅንን ማሽን ደምጭ	1 2 3 4 5 6 7 8 9 10
	o በጣቱ ላይ አክስጅን መለኪያ ደምጭ	1 2 3 4 5 6 7 8 9 10
	o ወሬ ማውራት	1 2 3 4 5 6 7 8 9 10
	o ነብሳይዘር/ በአፍንጫልይ የሚረግ አክስጅንና መድሃኒት መለጫ	1 2 3 4 5 6 7 8 9 10
	o ሀኪም / ነርሶት / ወረቀቶት ፣ የገጽዎት እና ስልኮት ደምጭ	1 2 3 4 5 6 7 8 9 10
	o የቴሌቪዥንደምጭ	1 2 3 4 5 6 7 8 9 10
	o ከውጭ ካሉስልክ ጥሪዎች	1 2 3 4 5 6 7 8 9 10