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COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

KNOWLEDGE AND ATTITUDE TOWARDS CARE OF ELDER PATIENTS AND ASSOCIATED FACTORS AMONG NURSES WORKING IN ADULT ACUTE CARE UNITS IN SELECTED GOVERNMENTAL HOSPITALS OF ADDIS ABABA, ETHIOPIA, 2018.

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ABBREVIATION AND ACRONYM

AAHB-IRB	Addis Ababa Health Bureau Institutional Review Board
AAS	Attitude Ageism Scale
AAU	Addis Ababa University
ADL	Activity of Daily Living
ETB	Ethiopian Birr
GC	Geriatric care
EW	Emergency Ward
ICU	Intensive Care Unit
KAOPS	Kogan Attitude Toward Older Patient Scale
KOP-Q	Knowledge About older patient quiz
MoLSA	Ministry of Labor and Social Affair
NCD	Non-Communicable Disease
OPACS	Older Patient in Acute Care Survey
OR	Operation room
PI	Principal Investigator
RN	Registered Nurse
S-CVI	Scale-Content Validity Scale
SD	Standard Deviation
SPSS	Statistical Package for Social Science
SRS	Simple Random Sampling
SPHMMC	St Paul's Millennium Medical College
TASH	Tikur Anbessa Specialized Hospital

TABLE OF CONTENT

CONTENTS **PAGE**

APPROVAL BY THE BOARD OF EXAMINATION I

STATEMENT OF DECLARATION II

ACKNOWLEDGEMENT III

ABBREVIATION AND ACRONYM IV

TABLE OF CONTENT V

LIST OF TABLES VII

LIST OF FIGURES VIII

ABSTRACT IX

1. INTRODUCTION 1

1.1 Background 1

1.2. Statement of the problem 3

1.3 Justification of the Study 5

1.4 Significance of the Study 6

2. LITERATURE REVIEW 7

2.1 Knowledge of Nurses Regarding Care of Elder Patient 7

2.2 Attitude of Nurses toward Care of Elder Patient 8

2.3. Factors Influencing Knowledge and Attitude of Nurse toward Care of Elder Patient 10

3. OBJECTIVE OF THE STUDY 16

3.1 General Objective 16

3.2 Specific Objective 16

4. METHODOLOGY 17

4.1 Study Area and Period 17

4.2 Study Design 17

4.3.2 Study Subject 18

4.3.4 Eligibility Criteria 18

4.4. Sample Size Determination 18

4.5 Sampling procedure 20

Table of content(Con't….)

4.6 Study variable 23

4.6.1 Dependent variables 23

4.6.2 Independent variables 23

4.7.1 Data collection Instrument 24

4.7.1.1 Knowledge of Nurses toward Care of Elder Patient Instrument 24

4.8 Operational definition 24

4.9 Data Processing and Analyzing 24

4.10. Data quality Assurance 25

4.11 Ethical consideration 25

5. RESULTS 26

5.1 Socio-Demographic Characteristics of Nurses 26

5.2. Other Factors Associated with Nurse's Knowledge and Attitude toward Care of Elder Patient 28

5.3 Nurses Knowledge toward Care of Elder Patient 29

5.3.1 Regression analysis of Nurses' Knowledge toward care of elder patient with related variables 33

5.4.1. Regression analysis of nurse's attitude toward care of elder patient 44

6. DISCUSSION 49

7. STRENGTH AND LIMITATION OF THE STUDY 56

7.1 Strengths of The Study 56

7.2 Limitations of the study. 56

8. CONCLUSION AND RECOMMENDATION 57

8.1 Conclusions 57

8.2 Recommendation 57

6. REFERENCES 59

ANNEX I:-INFORMATION SHEET 63

ANNEX II: - CONSENT FORM 65

ANNEX III: - ENGLISH VERSION QUESTIONNAIRES 66

LIST OF TABLES

Table 1: Allocation of nurse participants from each ward/unit of the selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____21

Table 2: -Socio-demographic characteristics of nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____27

Table 3: - Factors associated with knowledge and attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____29

Table 4: -Frequency distribution of KOP-Q among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____31

Table5: - Regression analysis of knowledge toward care of elder patient with related variable among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____35

Table 6: -Frequency distribution of OPACS among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____38

Table 7: - Frequency distribution of OPACS on Likert scale among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____41

Table 8: - Regression analysis of attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018____46

LIST OF FIGURES

Figure 1: - Conceptual framework for nurses' knowledge, attitude and associated factors toward care of elder patient_____15
Figure 2: - Schematic presentation of sampling procedure_____22
Fig 3**:** -knowledge toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____30
Fig 4: -Attitude toward care of elder patients among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018_____37

ABSTRACT

Background: The percentage of aged population 60 years and above is globally increasing. Quality of nursing care provided to elder people depends on nurse's knowledge and attitude. Knowledge regarding care of patient investigated in a few studies showed that nurses have low to average knowledge with the care of elder patient. Most of the studies across nation revealed negative attitude toward care of elder patient. In Ethiopia, the problems of older people had not addressed adequately. To date, no similar study has conducted in Ethiopia in concerning nurse's knowledge and attitude toward care of elder patient. **Objective**: To assess knowledge, attitude and associated factors toward care of elder patient among nurses working in adult acute care unit in selected public hospital of Addis Ababa, Ethiopia, 2018. **Methods:** Institution based cross-sectional study employed using quantitative descriptive study on 457 nurses in five selected government hospital in Addis Ababa. Multi stage sampling and simple random sampling techniques were employed to select the study subjects. Structured self-administered questionnaire was used to collect data. **Results**: Among 457 respondents, 131(28.7%) of nurses' have good knowledge toward care of elder patient whereas 100(21.9%) nurses have positive attitude toward care of elder patient. The result showed that age and year of experience were significantly associated with nurse's knowledge toward care of elder patient ($p<0.05$, 95% C.I). Similarly, sex, marital status, level of education, year of experience in nursing profession, adequacy of physical space, communicating with patient/family care giver and nurse's knowledge were significantly associated with nurse's attitude toward care of elder patient ($p<0.05$, 95% C. I). **Conclusion and Recommendation**: Majority of nurses had poor knowledge and negative attitude toward care of elder patient. Age and year of experience were significantly associated with knowledge. Similarly, sex, marital status, level of education, year of experience, adequacy of physical space, communicating with patient/family care giver and nurse's knowledge of care of elder patient were significantly associated with nurse's attitude toward care of elder patient ($p<0.05$, 95% C.I). Therefore, federal ministry of health, hospital managers and nursing department should work cooperatively in order to improve nurse's knowledge and enhance their attitude toward care of elder patient.

Keywords:-knowledge, attitude, care, nurses, elder

1. INTRODUCTION

1.1 Background

Old age is a period when irreversible physiological, chronological, spiritual and social changes and losses of roles are experienced and the adaptation of the system to the environment decreases. Elderly individuals often experience more than one health problem and visit health institution usually. The length of the period of old age brings increased need for long-term care (1). Older people in developing countries are highly vulnerable group of the society exposed to hardship, malnutrition, poverty and old-age-related diseases. In these countries, the major problems associated with old age are poor diet, ill health and inadequate housing, which all exacerbated by poverty (2).

The world older population continues to grow rapidly as fertility rates have fallen to very low levels in most world regions and people tend to live longer. When the global population reached 7 billion in 2012, 562 million (or 8.0 percent) were aged 65 and over. In 2015, 3 years later, the older population rose by 55 million and the proportion of the older population reached 8.5 percent of the total population (3). In 2015, there were 46 million people aged 60 years or over in sub-Saharan Africa, an increase from 23 million in 1990. In 2050, a projected 161 million older persons will reside in the region. Notably, the growth rate of the older population of sub-Saharan Africa that is projected for the 2040s is faster than that experienced by any other region since 1950 (4).

An estimated 100,000 people worldwide die each day of age related causes. The elders classified by age into young old for those aged 60-74years, middle old for those aged 75-84years, old for those aged 85-94 years and oldest old for those 95years and above. Care of the elderly is the fulfillment of the special needs and requirements that are unique to senior citizens. It covers such services as assisted living, adult day care, long-term care, nursing homes, hospice care and home care. The care of the elderly is multidimensional and these include physical, emotional, spiritual and social care (5). Despite the rise in demand of nursing care of elder, the care of elder patient has not been desirable area of nursing practice (6, 7). Nurses are more

preferred to work with younger population than providing care for elder patient because of low status of older people care in the hospital setting. Such attitudes towards caring for older adults originate from nurses' exposure to pervasive societal stereotypes and ageist beliefs (8).

Ethiopia is the second most populous country in sub-Saharan Africa. In Ethiopia, the age at which peoples considered elder is 60 years and above as taken from UN definition of elder people, which is an age, at which a person is entitled to pension or retirement of benefits. This is in line with the definition of older people in Ethiopia as used by the Ministry of Labor and Social Affairs (MOLSA) (2). In Ethiopia, though the number of elder population shares smaller proportion relative to the child and working age categories, its size has been increasing over time according to Ethiopian national census. In terms of size, this age group was 1.7, 2.3 and 2.6 million in 1994, 2007 and 2012 census respectively. Its relative shares were 3.2 percent in 1994 and 2007, and 3.1 percent in 2012, 4 percent in 2016 from the total national population of the country (9).

In Ethiopia, the problems of older people have not been addressed adequately, there is lack of trained personnel, and there is no geriatric training in any of the health training institutions in the country. While older people are vulnerable to various communicable diseases like anybody else, they are peculiarly more susceptible to non-communicable disease (NCD), especially to the most common ones such as diabetes, hypertension, eye and hearing impairment, cardiac ailments, arthritis and the like all these problem require nursing care (2).

1.2. Statement of the problem

The percentage of aged population 60 years and above is globally increasing (10). Number of African's elder population aged 60 and above has been increasing in a more rapid pace. In 2005, Africa was home to about 47 million people aged 60 and over, most of whom live in rural areas. Africa's older population is set to increase by 50% between 2000 and 2015 and by nearly fivefold by the year 2050 (11).

The life expectancy of world population has also been improved over time. According to United Nations World Population Prospects 2015 Revision, Worldwide, the average life expectancy at birth was 70.5 years (68 years and 4 months for males and 72 years and 8 months for females) over the period 2010–2015 (12). In 2017, life expectancy at birth for Ethiopia was 65.87 years. Life expectancy at birth of Ethiopia increased from 65.04 years in 2015 to 65.87 years in 2017 growing at an average annual rate of 0.64 %. In the ranking by life expectancy at birth including 186 countries, Ethiopia has the 145th rank that is close to the positions of such countries as the United Republic of Tanzania and the Papua New Guinea (13).

A recent assessment by the World Health Organization (WHO, 2015) warns that health Systems around the world are falling short with respect to meeting the needs of older persons. The report summarizes the present situation as, current public health approaches to population ageing have clearly been ineffective. The health of older people is not keeping up with increasing longevity. Marked health inequities are apparent in the health status of older people. Current health Systems are poorly aligned to the care that older populations require even in high-income Countries (10). Adults currently use a disproportionately higher amount of health services compared with other age groups (14), and are more likely to experience complications (e.g. delirium, functional decline, pressure ulcers) and adverse events (e.g. fall-related injuries) during hospitalization (15,16).

Knowledge regarding older people has only investigated in a few studies. Results from these studies indicate that nurses have low to average knowledge with the care of elder patient (17). Therefore, there is a growing demand for Nurses to improve their knowledge and commitment

to work with older people in diverse settings in the context of a rapidly ageing population (18). A systematic review by Liu, Yun-E et.al of Nurses attitude towards older people across nation identified that the attitude of nurses toward cares of elder patient ranged from low to moderate (6). Despite attempts made to improve negative attitude and increase knowledge, a lack of interest in working with older patient persist, rather nurses choose to work with adult patient (19).

The study conducted in Ethiopia by Help Age international on the state of health revealed that about 75 per cent of the respondents were suffering from at least one chronic disease and of these 77.5 per cent of them were undergoing medical treatment. The first three most common diseases older people were receiving medical treatment for are eye problems (29 per cent), followed by arthritis (20.17 per cent) and hypertension (11.83 per cent). Urinary tract infections, hearing problems, and heart conditions are also important health problems that older people are seeking medical treatment (2). Nurses provide the front line health care for older adults in a wide variety of settings, including preventive care in primary care offices and in the community, acute care in hospitals, and long-term care in nursing homes and assisted living facilities (20).

The aged are one of the most rapidly growing, vulnerable and high-risk groups in terms of health and socio-economic status in the society today. Therefore, Encouraging the next generation of nurses and nurse scholars to pursue careers in geriatric nursing is of critical importance, because the majority of health care consumers in the coming decades will be older adults. Future nurses need to be prepared with adequate knowledge and good attitude to provide older adults with the best possible care (21).

In Ethiopian, there is no published research concerning Knowledge and attitude of nurses toward care of elder patient. Therefore, this research assessed the level of knowledge, attitude and associated factor toward care of the elderly patient among nurses working in selected hospitals in Addis Ababa.

1.3 Justification of the Study

In Ethiopia, the number of elder population has been increasing over time and about 75% of the elder people were suffering from at least one chronic disease and of these 77.5% of them were undergoing medical treatment. Even though nurses are frontline health care provider of elder patient, their level of knowledge and attitude toward care of elder patient has not been investigated and nurses have no special training on the care of elder patient. Therefore, the objective of this study was to assess nurse's knowledge, attitude and associated factor toward care of elder patient, which will use as baseline for further studies.

1.4 Significance of the Study

In Ethiopia, elder people are highly vulnerable to multiple problems, which are physical, psychological, economic and health related problems. These problems are inter-linked, and all have implications on the health situations of older people. Nurses play major roles in determining and providing desirable standards of health care for elder patient and the quality of health care service provided to older population is strongly influenced nurse's knowledge and attitude towards older patient.

To date, no similar studies have been conducted in Ethiopia to examine nurses' level of knowledge and attitude regarding care of elder patient. Therefore, this study has assessed nurses' knowledge, attitude and associated factors toward care of elder patient. The result of this study will assist policy makers, ministry of health, hospital managers, governmental and non-governmental organizations to be aware of nurse's level of knowledge, attitude and associated factor toward care of elder patients to develop strategies for promoting health of elder people and improve quality of care of elder patient. The outcome of this study will also be used as a base line evidence for further study and activities.

2. LITERATURE REVIEW

2.1 Knowledge of Nurses Regarding Care of Elder Patient

Globally, the number of people aged 60 years and over is expected to increase from 600 million to 2 billion between 2000 and 2050(10). The elders are affected by many different factors; therefore, caring for the elderly is a challenge that needs to be met differently as a person's aging process progresses, as well as to adapt itself to each personal situation. Elderly people have additional needs and face additional challenges as they age. Therefore, a Nurse as a caregiver need to know what those needs are and how they can be met (22).

The study conducted in Saud Arabia on health professionals' knowledge and attitudes toward older people in primary care examined Knowledge about the ageing process and the care of older people accordingly overall nurses in the three major universities in Saudi Arabia had poor knowledge of care of elder people (18). Another study conducted in Netherland investigated knowledge levels of student and registered nurses about older hospitalized patients. Knowledge levels were assessed in relation to their educational level and work experience. Three important results were found. First, in all groups a substantial proportion of participants demonstrated insufficient knowledge about older patients. Second, results demonstrated higher knowledge levels for bachelor BSC nurses compared to Associate degree (student) nurses, confirming that educational qualifications play a role in the quality of care older people receive (17).

The study conducted in Iran, Isfahan, Al-zahra hospital on relationship between ageism and some demographic aspects in offering nursing care to elder patients, investigated knowledge and attitude level toward care of elder patient. According to result of the study, 67.2% and 32.8% of nurses had poor and good knowledge respectively (23). Similarly, the study done in Slovak Republic, Derér Faculty Hospital on Nurses' attitudes and knowledge of the geriatric age issue indicated that 91% and 9% of nurses had good and poor knowledge respectively (24). The study conducted in acute-care teaching hospital in northern California on emergency nurses geriatric knowledge and perceptions of their geriatric care investigated that 80% of the participants had good knowledge. The mean score was 8.53 (SD ± 1.866) (25), but study on

Perception of practical skill and geriatric care knowledge among nurses working in a Swiss emergency department showed the overall score in the knowledge test is considered poor (26). Similarly, study on Portuguese nurse's knowledge of and attitudes toward hospitalized older adults investigated that only 21.2% (226/1068) of the Registered nurse had a mean score > 0.5, which indicated poor knowledge level (27).

The study conducted in Nigeria on health professional knowledge, attitude and practice of care of the elderly patients showed that 96%, 8%,1% of nurses have good, average and poor knowledge of nursing care of elder respectively (5**).** The study conducted in similar country on nurse's attitude and knowledge of gerontology care revealed that nurses had high knowledge of aging process and the response of elderly patients to hospitalization (96.9% respondents accepted the fact that decline of mental power and dementia common with old people may affect their coping ability, 86.2% agreed that decreased mental ability of elderly patient often caused by aging process and illness affect response to care). More than 90% of the respondents stated that assessment and evaluation needed for effective care of the elderly (28).

2.2 Attitude of Nurses toward Care of Elder Patient

According to research conducted in Turkish on attitude of nurse toward elder patient, many nurses have a negative attitude towards older patients. They are more interested in technical specialties such as intensive care, surgery and emergency than in working in geriatrics, which contributes to less popularity of care for older patients. The care of older patients requires a high level of expertise because of multi-pathology, poly-pharmacy and behavioral changes. Ultimately, the negative attitude of nurses will have a negative impact on the quality of care and on the quality of life of older patients (29).

The study done on Portuguese nurses' knowledge of and attitudes toward hospitalized older adults investigated that the mean attitude score was 0.40 _ 0.21. Only 18.8% (201/1068) of the nurses obtained a mean attitude score of > 0.5, indicating negative attitudes among Portuguese RNs toward care of hospitalized elder patient (27). The study in Finland by Elorenteet. al (2014) on nurse's perception of individual preference of elder patient and related factor investigated

overall positive attitude toward nurse's elder patient care (30). Another study by Liu et al (2015) on explanatory model of registered nurse attitude toward older people and working with elder patient found slightly overall positive attitude toward working with older adults (89.7% of nurses reported positive attitudes towards working with older patients (31).

The study conducted in Iran, Isfahan, Al-zahra hospital on relationship between ageism and some demographic aspects in offering nursing care to elder patients, investigated knowledge and attitude level toward care of elder patient. According to result of the study 89.2% and 9.8% of nurse respondent had negative and positive attitude toward care of elder patient respectively (23). The study in similar country on Attitudes toward elderly care among Nurses working in Medical-Surgical Wards of Zanjan hospitals investigated that 97% of nurses had positive attitudes toward the care of elderly (32). Similarly, the study conducted in Iran on attitudes toward elderly care among nurses working in the city of Ilam showed that 54.3% of nurses had negative attitudes toward the elderly, where whereas 45.7% had positive attitude (33).

The study done in Slovak Republic, Derér Faculty Hospital on Nurses' attitudes and knowledge of the geriatric age issue indicated that 72% of nurses had positive attitude toward care of elderly and 28% of them had negative attitude toward care of elderly (24). The study carried out to investigate relations among knowledge, attitude, and nursing practice towards the elderly care in Korea, geriatric hospitals revealed that subjects' knowledge score was 0.49 out of 1 and their attitude was 3.72 out of 7 (34).

The study conducted in central Erzurum, Turkey on Difficulties experienced by nurses in older patient care and their attitudes toward the older patient's revealed overall positive attitude (98.83%) of nurses toward older patient's care (35). Another research conducted in Saud Arabia on health professional knowledge and attitude toward care of elder reported nurse's over all negative attitudes toward older patients. The study stated that a high standard of care for older people linked to the positive attitudes of health professional (18). Because attitude related to behavior, negative attitudes may affect the quality of care, older patients receive in hospital (17).

Studies included in a systematic review of Nurses attitude towards older patient care by Liu et al presented a slightly more negative attitude of nurses toward older patients in recent years, which are considered alarming. According to this systematic review of, twenty-five articles, which focus on nurse's attitude toward elder patient across nations, were revised. Among these eight were conducted in North America, six were in European countries and four were in Taiwan. The remaining were conducted in Australia (n=3), Jordan (n=2) and china (n=1). The finding of study identified that the attitude of nurses toward cares of elder patient ranged from low to moderate. The study conducted in Taiwan, Canada, Jordan, Australia, USA on attitude toward care of elder patient by Revised Kogan's attitudes toward old people scale (KAOPS) identified negative attitude toward elder people (6).

The study conducted in Nigeria on Nurses' attitude towards the care of the elderly investigated that nurses had a high positive attitude towards the care of elderly patients. They all agreed to feel good about care of elderly patients, though almost all of them (96%) felt that it was time consuming (28).

2.3. Factors Influencing Knowledge and Attitude of Nurse toward Care of Elder Patient

Study conducted in medical hospital, Eskisehir Osmangazi University, Turkey suggested the relationship between independent variable and attitude of nurses toward elder people by attitude ageism scale (AAS). When the relationship between the AAS and the independent variables concerning the socio-demographic characteristics of the individuals were examined, it was found that the total positive discrimination score of males was higher than that of females but that this difference was not statistically significant. When the relationship between marital status and the scale was examined, it was determined that the negative discrimination sub-dimension score of married individuals had a higher score ($p=0.02$). When the means of the total and sub-dimension scores of the AAS were examined in connection with the educational status of the individuals, it was determined that holders of postgraduate degrees had positive attitude toward care of elder patient compared to graduate degree ($p=0.02$). No statistically

significant difference was found between the AAS total, and whether they live with or have lived with an elderly individual in the same home ($p>0.05$) (1).

The research conducted in Taiwan investigated that the negative attitude towards older patients is caused by lack of geriatric knowledge (36). Study on nurse's knowledge and attitude toward care of elder patient in Portugal demonstrate no significant difference between males and female regarding knowledge of geriatric care, but nurses working in medical and surgical ward are more knowledgeable than nurses working in critical unit. Similarly, nurses working in an academic hospital demonstrated significantly more knowledge than nurses in hospitals centers, but the study found that nurses working in non-academic hospital centers had more positive attitudes towards older people care than nurses working in academic teaching hospitals (27).

The study on Nurses' attitudes toward older Patients in Acute Care in Israel Showed the relationship between nurses' characteristics and their attitudes toward older people. Significant positive correlation ($p<.05$) were found between these characteristics (age, experience, level of education) and their knowledge. Similarly, significant positive correlation between these characteristics and attitude toward care of elder patient were also found (37). The study conducted in central Erzurum, Turkey on difficulties experienced by nurses in older patient care and their attitudes toward the older patients revealed that nurses experienced difficulties due to the inadequacy of physical conditions; administrative problems; communication problems with elder patient and their family care giver; insufficient knowledge, and experience in older patient care. When the attitudes of nurses toward older people were examined with respect to the difficulties they experienced in older patient care, there was significant association between these difficulties and nurse's attitude ($p<0.05$. It concluded that the overall attitude of nurses toward older patients was positive. According to result of these study, nurses who have knowledge in elder care, have experience in elder care, those who like to communicate with elder patients and those who had been working in an adequate space had more positive attitude (35).

The study conducted in, Iran Isfahan, Al-zahra hospital on relationship between ageism and some demographic aspects in offering nursing care to elder patients, investigated knowledge and attitude level toward care of elder patient. According to results of the study, attitudes in male nurses were meaningfully more negative than females ($p<0.05$) but as far as attitudes toward the elderly was concerned, there seen no meaningful difference in different age groups. Also according to results of the study, there has seen no meaningful difference in attitudes toward elder patients of nurses with different educational level (BSC and MSC), marital status ($p>0.05$). Attitudes toward elder patients were a bit more positive in nurses who live with elder persons or have an elder person in their family or relatives. However, there was seen no significant association ($p> 0.05$) (23).

The study on perceptions of nurses about geriatric care (GC) environment and geriatric nurses' knowledge and attitudes in northern and central regions of hospitals in Portugal demonstrate no significant differences ($p>0,05$) Geriatric care Knowledge and Attitudes (38). The study on attitudes toward elderly among Nurses working in Medical-Surgical Wards in Iran, Zanjan hospitals revealed that the attitude scores were not significantly different in subgroups of gender, marital status, age, education, employment, work experience, living with an elderly (32).

The study carried out to investigate relations among knowledge, attitude, and nursing practice towards the elderly care in Korea, geriatric hospitals revealed that there were significant differences in nursing attitude among the subjects due to age, duration of employment, current level of nursing education, and living with the elderly people. There were significant positive correlations among knowledge and attitude with the nursing care of elder patient (34). The study conducted in Iran on attitudes toward elderly care among nurses working in the city of Ilam showed significant difference ($P < 0.05$) between attitudes toward the elderly care and age, marital status, gender, work experiences, and ward type. According to finding of the study male nurses had more positive attitude than female nurses did, married nurses had more positive attitude than single nurses (33).

The study done in Slovak Republic, Derér Faculty Hospital on Nurses' attitudes and knowledge of the geriatric age issue indicated that there was statistical significance of differences between age and knowledge ($p < 0.01$). The nurses aged 41–50 had poor knowledge and the younger nurses (20–30 years), (31-40) and the nurses over 50 showed good knowledge. The result of the study also investigated that there was slight negative correlation ($r= -0.239$) between knowledge of elder patient care and length of experience in nursing profession. The shorter practice the nurse has the better her/his knowledge is of the geriatric care.in addition the study investigated the relation between level of education and knowledge. Accordingly, there was positive slight linear correlation ($r= 0.268$) between education and knowledge of care of elder patient which was significant ($p<0.05$). Based on the finding it was concluded that the higher the degree of education the slightly better knowledge on the geriatric care (24).

The study conducted in Netherland on nurse's knowledge toward care of elder patient investigated that educational level and year of experience in nursing profession had significant association with knowledge toward care of elder patient. There was smaller increase of knowledge among nurses with fist 5 years of working experience. The group of nurses having 6-15 years of experience has the highest mean knowledge score. The mean difference in knowledge between nurses remains significant ($p < .001$) in the first 15 years of experience. However, it is no longer significant between nurses having >15 years of experience ($p = .257$). Results demonstrated higher knowledge levels for bachelor BSC nurses compared to Associate degree (student) nurses, confirming that educational qualifications play a role in the quality of care older people receive (17).

A systematic review of health professional knowledge and attitude toward care of elder patient conducted in Saud Arabia reported that all selected case had identified an association between advanced education levels and positive attitudes. The study indicated that positive attitudes toward older people increased with higher levels of education that include university degree and postgraduate degree. Systematic review investigated that Jordanian nurses' who lived with one or more elderly relatives reported more positive attitudes than those who did not. The study also indicated that male nurses working in acute-care units had positive attitudes towards older

people care, compared to female nurses. The study concluded that nurse's marital status was not associated with their attitudes (18).

Study in Finland and in Ankara university, Tukey by Polate et al. (2014) on nurse's attitude toward care of elder patient found that Nurses with past older people care experience and more than 10 years of elder patient care experience had more positive attitudes than those with current experience or less than 10 years of gerontology experience (30, 39). On the other hand, study conducted in Ireland on attitudes of healthcare workers towards older People in a Rural Population, reported no significant differences between a person's length of experience and attitudes (40).

The study conducted in Portuguese and Beijing china showed that knowledge of ageing and older adult care played role in more positive attitudes toward care of elder patient (25, 29). Another study on the effect of a geriatric nurse education program on the knowledge, attitudes, and certification of hospital nurse in United States found that the continuous education program increased the nurses' knowledge about care of elder patient and promoted positive attitudes toward older people (41).

In conclusion, the percentage of aged population 60 years and above is globally increasing. Knowledge regarding older people investigated in a few studies indicated that nurses have low to average knowledge with the care of elder patient. Similarly, different systematic review on Nurses attitude towards older people across nation identified the attitude of nurses toward cares of elder patient ranged from low to moderate. Factors that influence nurse's knowledge and attitude toward care of elder patient includes nurse's demographics (age, sex, level of education, year of experience, marital status, and living with elderly people), Type of hospital, Type of hospital unit/ward, Physical condition/adequacy of room, elder patient and Nurses Communication. In Ethiopia, the problems of older people had not addressed adequately and there is no study on nurse's knowledge and attitude toward care of elder patient

2.4 Conceptual Framework

The conceptual framework developed from literature review. According to the literatures, factors that influence nurse's knowledge include socio-demographic factors, type of hospital (academic or nonacademic) and type of unit nurses are working in. Factors that influence nurse's attitude includes knowledge of care of elder patient, socio--demographic factors, type of hospital, type of unit/ward, Physical condition/presence of adequate space/room, any guideline on elder care and Nurses Communication with the elder patient or family caregiver during care of elder patient.

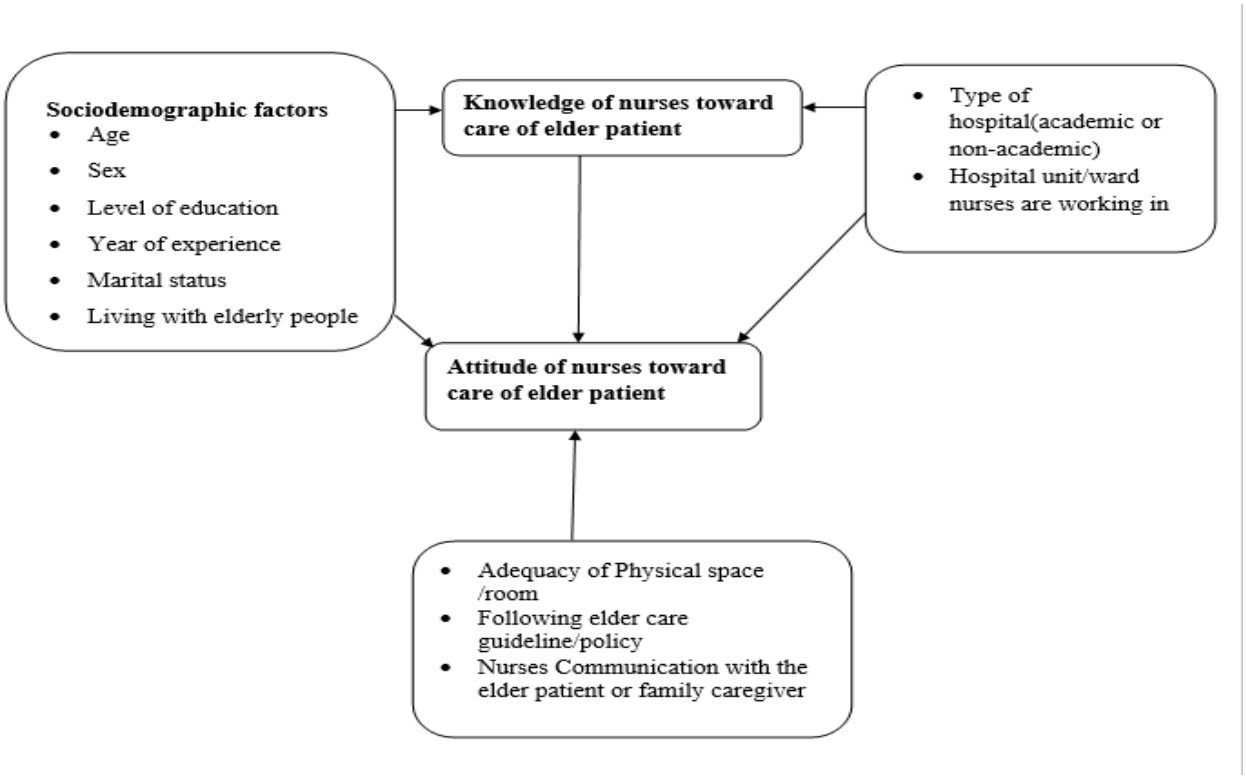

Fig 1: - Conceptual framework developed by principal investigator from literature (1, 16, 25, 33-40)

3. OBJECTIVE OF THE STUDY

3.1 General Objective

To assess knowledge and attitude towards care of elder patient and associated factor among nurses working in adult acute care unit in selected governmental hospital of Addis Ababa, Ethiopia, 2018

3.2 Specific Objective

1. To assess the level of nurses' knowledge towards care of elder patient among nurses working in adult acute care unit in selected governmental hospital of Addis Ababa, Ethiopia, from March 2018 to June 2018.

2. To assess the level of nurses' attitude towards care of elder patient among nurses working in adult acute care unit in selected governmental hospital of Addis Ababa, Ethiopia, from March 2018 to June 2018.

3.To identify factors affecting nurse's knowledge and attitude toward care of elder patient among nurses working in adult acute care unit in selected governmental hospital of Addis Ababa, Ethiopia, from March 2018 to June 2018.

4. METHODOLOGY

4.1 Study Area and Period

The study was conducted in Addis Ababa, the capital city of Ethiopia. Addis Ababa is a home to almost all ethnic groups in Ethiopia with estimated 6.6 million people by 2017. The four major ethnic groups living in the Addis Ababa are Amara (47%), Oromo (19.5%), Tigre (6.2%), Gurage (1.6%) (42). The city encompasses 6 zones and 28 woredas. The city has 51 hospitals of which 6 are owned by Addis Ababa City Administration Health Bureau, 4 by Federal Ministry of Health, 1 by Addis Ababa University, 3 by Nongovernmental organization, 3 by Defense Force and 34 by private owners. There are about 84 health centers and around 700 private clinics out of which 75 are higher clinics.

The government hospitals in Addis Ababa are; TASH, STPHMMC, Zawuditu Memorial Hospital, Alert Hospital, Yekatit 12 Hospital, RasDesta Damtew Memorial Hospital, St. Peters Hospitals, Menilik II Hospital, Tirunesh Beijing Hospital, Armed Forces Hospital, Bella Defense hospital, Federal Police hospital, Amanuel Hospital and Gandhi Hospital. The study was undertaken on nurses working in adult acute care unit in five randomly selected government Hospital namely TASH, STPHMMC, Rasdesta Damtew hospital, Yekatit 12 hospital and Minilik II hospital. The study was undertaken in these selected government Hospitals from March 2018 to June 2018.

4.2 Study Design

Institution based cross-sectional study was employed using quantitative descriptive study

4.3 Population

4.3.1 Source population

All registered nurses who were working in adult acute care unit in selected government hospitals of Addis Ababa

4.3.2 Study Subject

All registered nurses who were selected randomly from each adult acute care unit in the five-selected hospital.

4.3.4 Eligibility Criteria

4.3.4.1 Inclusion Criteria

1. Nurses who were working in Adult acute care unit (emergency, ICU, Inpatient, OR)
2. Nurses who were willing to participate in the study
3. Nurses who have at least six months of experience in nursing profession

4.3.4.2 Exclusion Criteria

1. Nurses who were not available during the time of the study (annual, maternal, sick leave)

2.Nurses who were seriously ill.

4.4. Sample Size Determination

The sample size was calculated using a formula for single population proportion considering the following assumptions. Confidence level = 95%, Critical value Zα/2 = 1.96, Degree of precision d =0.05. The proportion (p) =0.5(no study in Ethiopia concerning KA of nurses toward care of elder patient).10% contingency for possible non-response was considered.

Using

$$n = \frac{(Z\ \alpha/2)^2\ P\ (1-P)}{d^2}$$

Where; n= sample size

Z= critical value =1.96

P= proportion of nurses who are knowledgeable and have positive attitude toward care of elder patient (50%)

d=degree of precision=0.05

$$n = \frac{(1.96)^2(0.5(1-0.5)}{(0.05)}$$

n= 384

Total number of nurses in the adult care unit of selected hospitals (N)= 1164

Population correction formula; n/ (1+ [n/N]), will be used since the target population is less than10,000

Accordingly, the sample size will be **289**

The final sample size using design effect (1.5), nf=289 x1.5=**433** then adding 10% non-response rate nf=**476**

Finally, the number of nurses participating in each hospital was determined using

The population proportionate sampling (PPS).

$$n = \frac{nf * N \text{ in each hospital}}{N_{total}}$$

Where,

n= Proportion of nurses participate in the study in a given governmental hospital from each adult acute care unit,

nf= Final sample size obtained using correction formula (**476**),

Ntotal=is the total number of nurses in adult acute care unit of selected governmental hospitals (**1164**) i.e.

N = Total number of nurses in adult care unit in each selected governmental hospital, I, e (TASH =496, ST. Paul hospital=367, Rasdesta hospital=83, Yekatit 12 hospital= 123, Minilik hospital=95)

1) TASH= 476x496/1164 = **203**
2) SPHMMC=476x367/1164 = **150**
3) Rasdesta hospital=476x83/1164 = **34**
4) Yekatit 12 Hospital = 476x123/1164 **=** **50**
5) Menilik II Hospital =476x95/1164 = **39**

TOTAL=**476**

4.5 Sampling procedure

Multi stage sampling technique was employed to select the study subjects in each hospital. Five government hospitals in Addis Ababa (TASH, SPHMMC, Rasdesta Damtew hospital, Yekatit 12 hospital and Minilik II hospital) were selected using simple random sampling (SRS). The sample size was proportionally divided in to each hospital based on the number of nurses in the hospital. The allocated number of nurses for each hospital was again proportionally divide in to each ward/unit in the hospital based on the number of nurses in each ward/unit, finally from each ward/unit nurses were selected using simple random sampling.

Table 1: Allocation of nurse participants from each ward/ working unit of the selected hospitals

s/n	Name of hospital	Total number of nurses from each adult acute care unit/ward				Sample to be obtained from each adult acute care unit			
		Inpatient	EW	OR	Adult ICU	Inpatient	EW	OR	ICU
1	TASH	270	90	91	45	110	37	38	18
2	SPHMMC	261	41	35	30	107	17	14	12
3	RasDesta hospital	35	17	11	20	14	7	5	8
4	Yekatit12 hospital	65	22	12	24	27	9	5	9
5	Minilik hospital	45	22	11	17	18	9	5	7

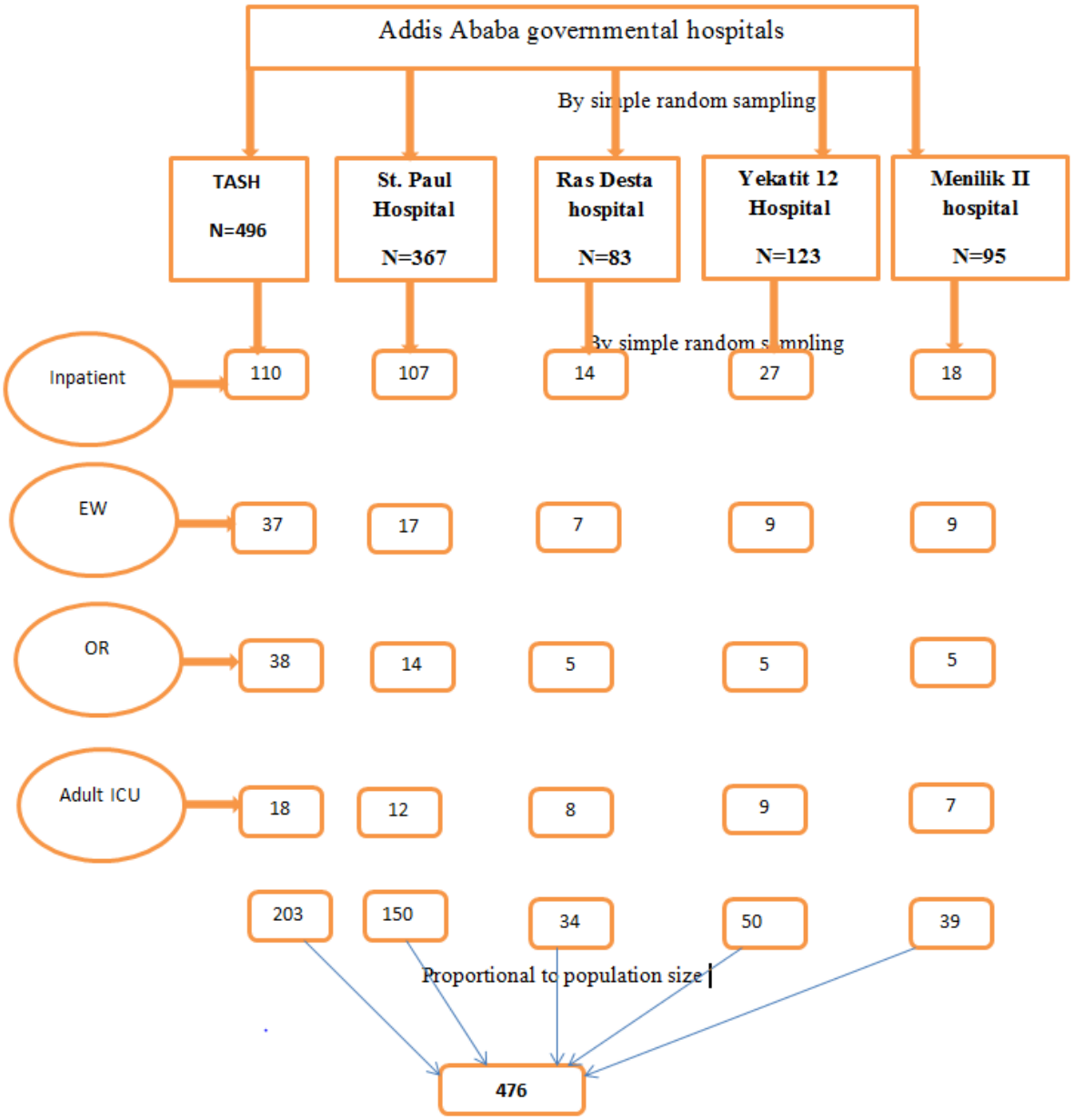

Figure 2: Schematic presentation of sampling procedure

4.6 Study variable

4.6.1 Dependent variables

Nurses knowledge and attitude toward care of elder patient

4.6.2 Independent variables

- Socio-demographic factors such as age, sex, level of education, year of experience, marital status, and living with elderly people)
- Type of hospital
- Type of hospital unit/ward nurses are working in
- Physical condition/adequacy of space/room
- Any elder care guideline/policy
- Nurses Communication with the elder patient or family caregiver during care of elder patient

4.7 Data Collection Procedure

Structured self-administered questionnaire was used to collect data on nurse's knowledge, attitude, and factors influencing nurse's knowledge and attitude toward care of elder patient. The data collection procedure was conducted over a period of one month facilitated by five experienced data collectors from staff nurses and supervised by three supervisor and principal investigator (PI). Data was collected at the five selected governmental hospital (TASH, SPHMMC, Menilik II hospital, Yekatit 12 hospital and RasDesta Damtew hospital) from March to May, 2018.The principal investigator has provided training for data collector for one day before the actual data collection time. The pretest was conducted before actual collection of data on 5% of study subject in Zewuditu Memorial hospital. The participants were provided with adequate information about the purpose of the study.

4.7.1 Data collection Instrument

4.7.1.1 Knowledge of Nurses toward Care of Elder Patient Instrument

To measure knowledge, the questionnaire adapted from Knowledge about Older Patients-Quiz (KOP-Q) was used. The KOP-Q was developed and validated in the Netherlands by Jorean Duken. The KOP-Q contains 30 dichotomous items (true/false) measuring knowledge about nurse's care of elder patient with every correct answer assigned **1** point and incorrect answer **0** points. The KOP-Q demonstrated adequate face-validity, good readability, a good Scale-Content Validity Index/average (S-CVI/ave), good item characteristics (psychometric validity) and reliability for the knowledge items.

4.7.1.2 Attitude toward Care of Elder Patient Instrument

To measure attitude, the questioner adapted from Older People in Acute Care Survey (OPACS) was used. OPACS is an instrument measuring hospital nurse's attitudes regarding older patient's care, which was developed in Australia and validated in the United States. The Australian version showed good face validity and high reliability. The United States version had a high content validity. Items are answered by a five-point Likert scale (1 = SD and 5=SA). The mean score was obtained by summing score then dividing by 34.

4.8 Operational definition

Good knowledge: -Respondents with KOP-Q score of greater than or equal to 23.

Poor knowledge: - Respondents with KOP-Q score of less than 23.

Positive attitude: - Respondents with OPACS Mean score greater than 3.

Negative attitude: -Respondents with OPACS Mean score of less than or equal to 3.

4.9 Data Processing and Analyzing

The data was coded, cleaned and entered into Epi-data manager 4.2 and exported to Statistical Package for Social Science (SPSS) version 23 for analysis. Descriptive statistics was used to determine results. Binary logistic and multi-variable logistic regression analysis was used to characterize the association between the variables. Odd ratio was calculated to determine

strength of association between dependent and independent variable. P- Value ≤ 0.05 was used for statistical significance. The result of the study was present in the form of texts, tables and figures.

4.10. Data quality Assurance

Training was given for Data collectors and supervisors on the objective of the study, contents of the questionnaire and how to maintain confidentiality and privacy of the study subject. Data was collected by five experienced staff nurses with diploma and above recruited from selected hospitals. Pre-test was conducted on 24 nurses working in Zewuditu hospital before the actual data collection begins and necessary corrections were made on the questionnaire. The collection of data was checked by principal investigator on daily basis for any incompleteness and /or inconsistency.

4.11 Ethical consideration

To conduct the study, Ethical clearance was obtained from Addis Ababa University, College of health science, school of Nursing and midwifery prior to beginning of the study. Official letter of permission from the department was submitted to Addis Ababa Health Bureau Institutional Review Board (AAHB-IRB), TASH, and SPHMMC. Ethical clearance taken from AAHB-IRB was submitted to Yekatit 12 Hospital, Menelik II Hospital and Rasdesta Damtew hospital in order to conduct the research. Following an explanation of the purpose and objective of the study, consent was obtained from those who were meet the inclusion criteria and agreed to participate. In addition, affirmation that they could be free to withdraw consent and discontinue participation without any form of prejudices was made. Confidentiality of information and privacy of participants was assured for all the information provided. To preserve the confidentiality, the data have not exposed to the third party except members of the research team. Participants were also informed that participating in the study will have not impose any harm on them and payment will not be given for participating in the study. Participants were informed whom to contact if they have any question or suggestion.

5. RESULTS

5.1 Socio-Demographic Characteristics of Nurses

From the 476 nurses working in the selected governmental hospitals and selected for this study, 457 were responded the questionnaire and included in the analysis making the response rate of 96%. Regarding sex of respondents, 232(50.8) were male. More than half, 270 (59.1%) of the respondents were in the age group 21-29 and the mean (+SD) age of respondents was 29.68(+5.33). The minimum and maximum age of respondents was 21 and 54 years respectively. More than two third of respondents 314(68.7) were single on marital status (**Table:2**).

Regarding educational status of respondents, more than three fourth of respondents 354(77.5%) have BSc degree in nursing. About two third of respondents 293(64.1%) had lived with elder people. The mean year of experience in nursing profession of respondents were 5.68 with minimum of 1 and maximum of 25 and almost two third of respondents 298(65.2%) have 1-5 year of experience in nursing profession. Regarding type of ward/unit in which they are working, 100(21.9%) of the respondents have been serving in a surgical ward (**Table:2**).

Table 2: -Socio-demographic characteristics of nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457

S/N	Socio-demographic characteristics	Frequency	Percent
1	**Sex**		
	Male	232	50.8
	Female	225	49.2
2	**Age**(min=21,max=54,mean=29.68,SD=5.33		
	21-29	270	59.1
	30-39	157	34.4
	≥40	18	6.6
4	**Marital status**		
	Single	314	68.7
	Married	134	29.3
	Divorced	9	2
4	**Level of education**		
	Diploma in Nursing	61	13.3
	Degree in Nursing	354	77.5
	Masters in nursing	42	9.2
5	**Ever lived with elder**		
	Yes	293	64.1
	No	164	35.9
6	**Year of experience**(min=1,max=25,mean=5.68, SD=5.04)		
	1 - 5	298	65.2
	6 – 10	110	24.1
	>10	49	10.7

Table 2: -Socio-demographic characteristics of nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (Con't…….)

	Socio-demographic characteristics (con't……)	**Frequency distribution**	**Percent**
7	**Type of ward**		
	Medical	81	17.7
	Surgical	100	21.9
	OR	63	13.8
	EW	60	13.1
	Adult ICU	57	12.5
	Oncology ward	27	5.9
	Gynecology ward	6	1.3
	Neurologic unit	26	5.7
	Orthopedic ward	37	8.1

5.2. Other Factors Associated with Nurse's Knowledge and Attitude toward Care of Elder Patient

As shown on the table below, most of the respondents 415(90.8%) were working in an academic hospital and more than two third 311(68.15) of them did not follow any form of elder care guideline/ policy when they give care for elder patient. From total nurse respondents, 136(29.8%) of them have ever worked in adequate space/room while they provide care for elder patient. similarly, 136(29.8%) of them like communicating with elder patients or their family caregiver when they provide care of elder patient **(Tale:3).**

Table 3: - Factors associated with knowledge and attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

Variable	Frequency	Percentage
Type of hospital		
Academic	415	90.8
Non-academic	42	9.2
Do you follow ant type of guideline/policy while you care for elder patient		
Yes	146	31.9
No	311	68.1
Have you ever worked in adequate space/room while you provide care for elder patient?		
Yes	136	29.8
No	321	70.2
Do you like to communicate with elder patient/family care giver when you provide care for elder patient?		
Yes	143	31.3
No	314	68.7

5.3 Nurses Knowledge toward Care of Elder Patient

Table 4 shows all KOP-Q distribution regarding knowledge of elder patient care based on 30 knowledge test questions. Overall, 326(71.3%) of nurses' have poor knowledge toward care of elder patient. The overall nurses' knowledge score regarding care of elder patient was obtained by recoding every correct answer in to 1 and every incorrect answer into 0. Nurses who answered greater than and equal to 23 correct answer were categorized as having good knowledge and those who scored less than 23 were categorized as having poor knowledge toward care of elder patient. **(Fig: 3).**

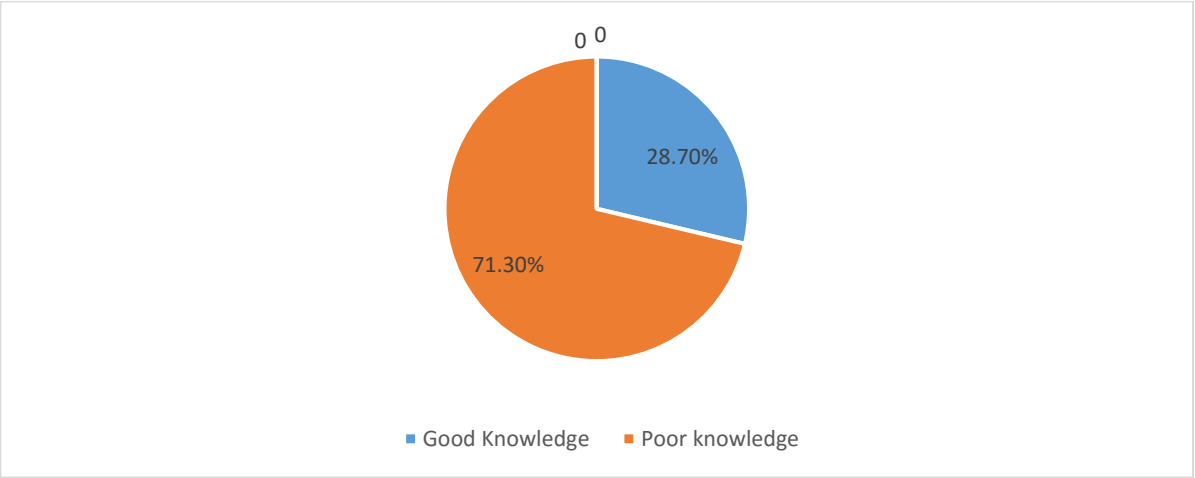

Fig 3**:** -knowledge toward care of elder patient among nurses working in in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

Table 4 illustrated highest percentage of nurses who answered items correctly and incorrectly regarding nurses' knowledge of care of elder patient. Those items the highest percentage of nurses answered correctly includes: Patients with a cognitive disorder, such as dementia, are at increased risk for delirium (82.3%). Urinary incontinence in an older person may indicate that the person is suffering from a urinary tract infection (76.1%). In general, older people are more sensitive to medication because their kidney and liver functions are declining (74%). Malnutrition can have negative effects on thinking and observation skills (73.7%), Asking patients whether they have fallen in the past 6 months is a good way of assessing increased risk of falling (72.4%). In the case of delirium, activities should spread out evenly over the day (70.2).

Conversely, five items the highest percentage of nurses answered incorrectly includes: Forgetfulness, concentration issues and indecisiveness are parts of aging rather than indicators of depression (55.1%). It is good to provide extensive instruction about how to complete tasks to patients suffering from apraxia (52.3). Stress incontinence may occur in patients who are not capable of opening their own trousers (51.6). In the case of difficulty swallowing, all medicines must be ground to ensure that patients ingest them (50.3%), and as a nurse, you have to speak clearly into the ear of the hearing-impaired older Patient (49%).

Table 4: -Frequency distribution of KOP-Q among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

S/N	Items	True	False	correct answer	Incorrect answer
		n	N	N	N
		%	%	%	%
201	Forgetfulness, concentration issues and indecisiveness are parts of aging rather than indicators of depression.	252 55.1%	205 44.9%	205 44.9%	252 55.1%
202	Urinary incontinence in an older person may indicate that the person is suffering from a urinary tract infection.	348 76.1%	109 23.9%	348 76.1%	109 23.9%
203	Patients with a cognitive disorder, such as dementia, are at increased risk for delirium	376 82.3%	81 17.7%	376 82.3%	81 17.7%
204	Malnutrition can have negative effects on thinking and observation skills	337 73.7%	120 26.3%	337 73.7%	120 26.3%
205	In general, older people are more sensitive to medication because their kidney and liver functions are declining	338 74%	119 26%	338 74%	119 26%
206	Meeting with families during patient assessment is only required for persons suffering from dementia	166 36.3%	291 63.7%	291 63.7%	291 63.7%
207	For older people, bed rest is important to enhance recovery	179 39.2%	278 60.8%	278 60.8%	179 39.2%
208	Patients rarely remember that they were anxious and/or restless during delirium	216 47.3%	241 52.7%	241 52.7%	216 47.3%
209	Older people need less fluid because they exercise less.	195 42.7%	262 57.3%	262 57.3%	195 42.7%
210	Asking patients whether they have fallen in the past 6 months is a good way of assessing increased risk of falling.	331 72.4%	126 27.6%	331 72.4%	126 27.6%
211	Pressure that cuts off the blood supply to tissue for two hours may result in pressure ulcers	318 69.6%	139 30.4%	318 69.6%	139 30.4%

Table 4: -Frequency distribution of KOP-Q among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't….)

212	Depression is recognized in older people less frequently than it is in younger people	305 66.7%	152 33.3%	305 66.7%	152 33.3%
213	Lowering the frequency of a medication is an effective intervention to achieve (medication) adherence by patients	295 64.6%	162 35.4%	295 64.6%	162 35.4%
214	Incontinent patients must have their soiled clothing changed but do not need to be placed on the toilet afterwards.	211 46.2%	246 53.8%	246 53.8%	211 46.2%
215	It is good to have older people drink more often, because they have a reduced thirst sensation.	316 69.1%	141 30.9%	316 69.1%	141 30.9%
216	In the case of delirium, bright lighting should be used to illuminate all of the corners of the room	199 43.4%	258 56.5%	258 56.5%	199 43.4%
217	Medication may cause geriatric problems such as memory deficits, incontinence, falling	324 70.9%	133 29.1%	324 70.9%	133 29.1%
218	Overburdening of family may lead to abuse of the person for whom they are providing care	314 68.7%	143 31.3%	314 68.7%	143 31.3%
219	It is good to provide instruction about how to complete tasks to patients suffering from apraxia	239 52.3%	218 47.7%	218 47.7%	239 52.3%
220	When speaking to hearing-impaired older patients, it is best to speak at normal Volume.	237 51.9%	220 48.1%	237 51.9%	220 48.1%
221	An older person with a BMI of >25 cannot be undernourished	197 43.1%	260 56.9%	260 56.9%	197 43.1%
222	In the case of difficulty swallowing, all medicines must be ground to ensure that patients ingest them	230 50.3%	227 49.7%	227 49.7%	230 50.3%
223	In the case of depression, memory problems may occur.	304 66.5%	153 33.5%	304 66.5%	153 33.5%

Table 4: -Frequency distribution of KOP-Q among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (Con't….)

224	Most family caregivers do not need additional support from homecare services	194 42.5%	263 57.5%	263 57.5%	194 42.5%
225	As a nurse, you have to speak clearly into the ear of the hearing-impaired older Patient	224 49%	233 51%	233 51%	224 49%
226	Pain medication should be administered to older people as little as possible, due to the possibility of addiction	203 44.4%	254 55.6%	254 55.6%	203 44.4%
227	We identify pressure ulcers only if blister formation or abrasions have occurred	180 39.4%	277 60.6%	60.6	277 60.6%
228	In the case of delirium, activities should be spread out evenly over the day.	321 70.2%	136 29.8%	321 70.2%	136 29.8%
229	The risk of falling is higher for people in the hospital setting compared with those who are living at home.	280 61.3%	177 38.7%	280 61.3%	177 38.7
230	Stress incontinence may occur in patients who are not capable of opening their own trousers	236 51.6%	221 48.4%	221 48.4%	236 51.6%

5.3.1 Regression analysis of Nurses' Knowledge toward care of elder patient with related variables

Bivariate and multivariate logistic regression analysis was used to identify the factors that are associated with nurse's knowledge toward care of elder patient. On binary logistic regression analysis sex, age, marital status, level of education, year of experience in nursing profession and living with elder were significantly associated with knowledge toward care of elder patient at p-value <0.05 with 95% C.I. However, type of unit and type of hospital in which nurses are working have no statistical association with knowledge toward care of elder patient (P. value> 0.05; 95% C.I).

After bivariate analysis, only those variables, which were significantly, associated (p- value < 0.05) with knowledge were entered for further multivariate analysis. By adjusting potential confounders in multivariate logistic regression analysis, Nurse participants who were between age of 30- 39 were 3 times more likely knowledgeable than those who are between age of 20-29 [AOR:3; 95% C. I (1.5-5.4)]. similarly, Nurse participants who were ≥40 years were 5 times more likely knowledgeable than those who are between age of 20-29 [AOR:5; 95% C. I (1.3-17.4)].

Regarding year of experience, those nurse participants who have 6- 10 year of experience in nursing profession were 2.4 times more likely knowledgeable than those who have 1-5 year of experience in nursing profession [AOR:2.4; 95% C. I (1.3-4.6)]. Similarly, those nurse participants who have > 10 year of experience in nursing profession were 3.2 times more likely knowledgeable than those who have 1-5 year of experience in nursing profession. [AOR: 3.2, 95%; C. I (1.2-9)].

Table5: - Regression analysis of knowledge toward care of elder patient among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

Variable	**Knowledge of care of elder patient**				**COR(95% CI)**	**AOR(95%CI)**
	Good knowledge		**Poor knowledge**			
	N	**%**	**N**	**%**		
Sex						
Male	74	31.9	158	68.1	1.38(0.9-2)	
Female	57	25.3	168	74.7	1	
Age						
20 -29	37	13.7	233	86.3	1	1
30-39	73	46.5	84	53.5	5.4(3.4-8.7)***	**3(1.5-5.4)***
≥40	21	70	9	30	14.6(6-34.5)***	**5(1.3-17.4)****
Marital status						
Single	78	24.8	236	75.2	1	
Married	49	36.6	85	63.4	1.7(1.1-2.6)**	
Divorced	4	44.4	5	55.6	2.4(0.6-9.2)	
Level of education						
Diploma in Nursing	14	23	47	77	1	
Degree in Nursing	94	26.6	260	73.4	1.2(0.6-2.3)	
Masters in Nursing	23	54.8	19	45.2	4(1.7-9.5)***	

Table5: - Regression analysis of knowledge toward care of elder patient among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't……)

Year of experience						
1-5 year	46	15.4	252	84.6	1	1
5.- 9. Year	53	48.2	57	51.8	5.(3.1-8.3)***	**2.4(1.3-4.6)*** **
≥10	32	65.3	17	34.7	10(5.2-20)***	**3.2(1.2-9)** **
Ever lived with elder						
Yes	91	31.1	202	68.9	1.3 (0.9-2.1)	
No	40	24.4	124	75.6	1	
Type of unit/ ward						
Medical ward	25	30.9	56	69.1	1	
Surgical ward	21	21	79	79	0.59(0.3-1.16)	
OR	16	25.4	47	74.6	0.64(0.3-1.3)	
EW	26	43.3	34	56.7	1.3(0.6-2.6)	
Adult ICU	16	28.1	41	71.9	1.03(0.5-2.1)	
Oncology ward	6	22.2	21	77.8	1.12(0.4-2.8)	
Gynecology ward	2	33.7	4	66.7	1.12(0.2-6.5)	
Neurologic unit	4	15.4	22	84.6	0.4(0.12-1.3)	
Orthopedic ward	15	40.5	22	59.5	1.7(0.7-3.8)	
Type of hospital						
Academic	120	28.9	295	71.1	1.3(0.6-2.76)	
Non- academic	11	26.2	31	73.8	1	

1.00 = Reference *= p -value < 0.05, p -value **<0.025, ***p -value <0.01(significant) at 95% confidence interval.

5.4 Attitude of nurses toward care of elder patient

As portrayed in fig 4, the study result indicated that 100(21.9%) have positive attitude and 357(78.1%) of nurses have negative attitude towards care of elder patient. This was obtained by summing of all attitude related questions after reversing the negatively constructed questions with star sign (*), then divided by total number of question (34). The level of attitude toward care of elder patient was dichotomized as positive with attitude score of greater than three and negative with attitude score of less than or equal to three.

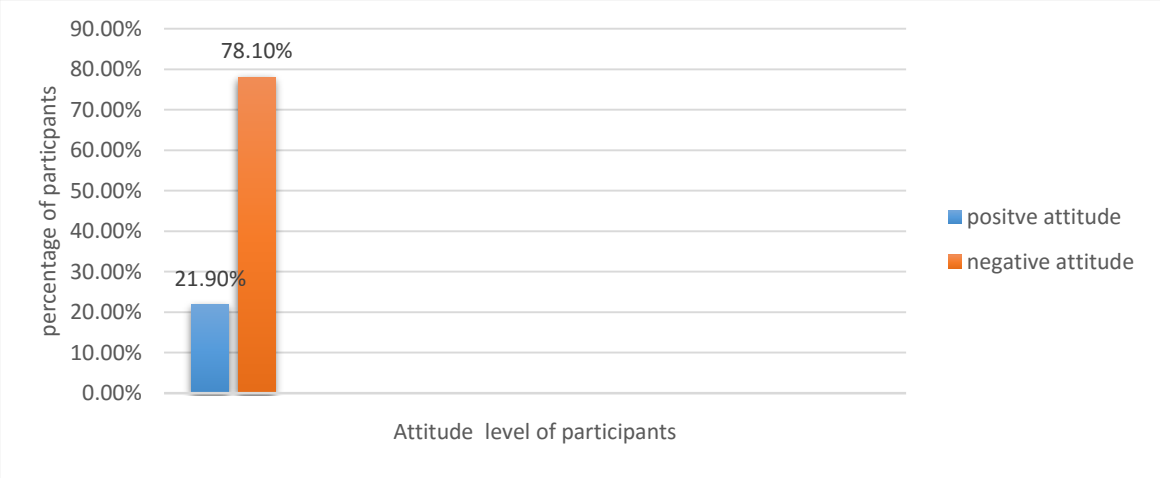

Fig 4: -Attitude toward care of elder patients among nurses working in adult acute care unit of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457

Table 6 shows that nurses' attitude category of each 34-attitude items in to positive and negative attitude. As observed from the table, those items which nurses have more positive attitude include; In the hospital, eating and drinking are the most common activities performed by older patients (n=298, 65.2%), nurses like to care for older patients (n=289, 63.2%). There are too many older patients in acute care hospitals (n=282, 61.7%). Older patients have extensive lengths of stay and take up beds that could be used for sicker patients (n=244, 53.4%) and those items which nurses have more negative attitude include. Older patients feel isolated in the acute care setting (n= 358, 78.3%). It would be a good idea for all hospitals to have an acute geriatric unit (n=352, 77%). Older patients become confused in a new setting (n=352, 77%). **(Table:6)**

Table 6: -Frequency distribution of OPACS among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

S/N	Items	Positive	Negative
301	Do you like to care for older patients?	289(63.2)	168(36.8)
302	*Do you think older patients are confused?	169(37)	288(63)
30 3	*Do you think Older patients pretend not to hear you	167(36.5)	290(63.5)
304	*Older patients are a nuisance to care for	143(31.3)	314(68.7)
305	*Older patients are more likely to be depressed than younger patients	130(28.4)	327(71.6)
306	*Older patients have to follow special diets.	115(25.2)	342(74.8)
307	*Older patients do not know the actions and interactions of their medications	147(32.2)	310(67.8)
308	*Older patients require less pain relieving mediation than younger patients	139(30.4)	318(69.6)
309	*Older patients become addicted to sleeping medications easily	124(27.1)	333(72.9)
310	*Incontinent patients are bothersome	133(29.1)	324(70.9)
311	*Urinary incontinence is part of the aging process	137(30)	320(70)
312	Older patients are more concerned with their bowel habits than younger patients	206(45.1)	251(54.9)
313	Elder patients are embarrassed when their bodies are exposed	186(40.7)	271(59.3)
314	*Too many older patients receive life-sustaining treatment	141(30.9	316(69.1)
315	Older patients have more discharge problems than do younger patients	182(39.8)	275(60.2)
316	At the time of discharge older patients are likely to be more dependent than younger patients.	170(37.2)	287(62.8)
317	Older patients require placement in long term care following a hospital admission	143(31.3)	314(68.7)

Table 6: -Frequency distribution of OPACS among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't….)

318	*Older patients have extensive lengths of stay and take up beds that could be used for sicker patients	244(53.4)	213(46.6)
319	*There are too many older patients in acute care	282(61.7)	175(38.3)
320	It would be a good idea for all hospitals to have an acute geriatric unit	105(23)	352(77)
321	Older patients are likely to be on more medication when admitted to the hospital than younger patients	109(23.9)	348(76.1)
322	Older patients become confused in a new setting	105(23)	352(77)
323	Older patients feel isolated in the acute care setting	99(21.7)	358(78.3)
324	*In the hospital, eating and drinking are the most common activities performed by older patients	298(65.2)	159(34.8)
325	Older patients have more skin problems than younger patients	119(26)	338(74)
326	Older patients are more likely to require assistance with mobility than younger patients	119(26)	338(74)
327	A lot of older patients have stiff joints	109(23.9)	348(76.1)
328	Older patients tend not to tell health professional if they are incontinent	112(24.5)	345(75.5)
329	Older patients experience changes in bowel elimination patterns in the acute care setting	105(23)	352(77)
330	Older patients are more likely to have open surgical procedures than laparoscopic surgery	113(24.7)	344(75.3)
331	Older patients become confused after operations/procedures	106(23.2)	351(76.8)
332	Older patients are more likely to develop post-operative complications	114(24.9)	343(75.1)
333	Older patients are particularly prone to nosocomial infections	115(25.2)	342(74.8)
334	Early discharge is difficult to achieve for older patient.	106(23.2)	351(76.8)

Table 7 shows nurses' attitude test questions score based on five Likert scales from strongly disagree to strongly-agree.

The highest percentage of nurses strongly disagrees with attitude test questions include; Early discharge is difficult to achieve with older patients (n=252, 55.1%). Older patients are likely to be on more medication when admitted to the hospital than younger patients are (n=248, 54.3%). Older patients have more skin problems than younger patients do (n=24253%). Older patients feel isolated in the acute care setting (n=242, 53%). Older patients become confused in a new setting (n=242, 52.5%. Conversely, the highest percentage of nurses strongly agree with attitude test questions include; In the hospital, eating and drinking are the most common activities performed by older patients (n=224, 49%). Nurses like to care for older patients (n=212, 46.4%). There are too many older patients in acute care hospitals (n=198, 43.3%), Older patients have extensive lengths of stay and take up beds that could be used for sicker patients (n=156, 34.1%). **(Table:7)**

Table 7: - Frequency distribution of OPACS on Likert scale among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

S/N	Items	SD	D	U	A	SA
		N %	n %	n %	n %	N %
301	Do you like to care for older patients?	100 21.9	39 8.5	29 6.3	77 16.8	212 46.4
302	*Do you think older patients are confused?	104 22.8	136 29.8	48 10.5	69 15.1	100 21.9
30 3	*Do you think Older patients pretend not to hear you	105 23	103 22.5	82 17.9	96 21	71 15.5
304	*Older patients are a nuisance to care for	135 29.5	122 26.7	57 12.5	71 15.5	72 15.8
305	*Older patients are more likely to be depressed than younger patients	158 34.6	138 30.2	31 6.8	66 14.4	64 14
306	*Older patients have to follow special diets	175 38.3	114 24.9	53 11.6	53 11.6	62 13.6
307	*Older patients do not know the actions and interactions of their medications	146 31.9	121 26.5	43 9.4	91 19.9	56 12.3
308	*Older patients require less pain relieving mediation than younger patients	131 28.7	119 26	68 14.9	87 19	52 11.4
309	*Older patients become addicted to sleeping medications easily	127 27.8	133 29.1	73 16	73 16	51 11.2
310	*Incontinent patients are bothersome	126 27.6	121 26.5	77 16.8	85 18.6	48 10.5
311	*Urinary incontinence is part of the aging process	128 28	133 29.1	59 12.9	75 16.4	62 13.6

Table 7: - Frequency distribution of OPACS on Likert scale among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't….)

312	Older patients are more concerned with their bowel habits than younger patients.	75 16.4	113 24.7	63 13.8	110 24.1	96 21
313	Elder patients are embarrassed when their bodies are exposed	74 16.2	107 23.4	90 19.7	92 20.1	94 20.6
314	*Too many older patients receive life-sustaining treatment	110 24.1	129 28.2	77 16.8	84 18.4	57 12.5
315	Older patients have more discharge problems than do younger patients	121 26.5	83 18.2	71 15.5	89 19.5	93 20.4
316	At the time of discharge older patients are likely to be more dependent than younger patients	140 30.6	94 20.6	53 11.6	96 21	74 16.2
317	Older patients require placement in long term care following a hospital admission	159 34.8	87 19	68 14.9	93 20.4	50 10.9
318	*Older patients have extensive lengths of stay and take up beds that could be used for sicker patients	71 15.5	75 16.4	67 14.7	88 19.3	156 34.1
319	*There are too many older patients in acute care hospitals	37 8.1	91 19.9	47 10.3	84 18.4	198 43.3
320	It would be a good idea for all hospitals to have an acute geriatric unit	213 46.6	88 19.3	51 11.2	70 15.3	35 7.7
321	Older patients are likely to be on more medication when admitted to the hospital than younger patients	248 54.3	82 17.9	18 3.9	66 14.4	43 9.4
322	Older patients become confused in a new setting	240 52.5	89 19.5	23 5	67 14.7	38 8.3
323	Older patients feel isolated in the acute care setting	242 53	79 17.3	37 8.1	64 14	35 7.7

Table 7: - Frequency distribution of OPACS on Likert scale among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't….)

324	*In the hospital, eating and drinking are the most common activities performed by older patients	51 11.2	86 18.8	22 4.8	74 16.2	224 49
325	Older patients have more skin problems than younger patients	242 53	72 15.8	24 5.3	70 15.3	49 10.7
326	Older patients are more likely to require assistance with mobility than younger patients	229 50.1	77 16.8	32 7	66 14.4	53 11.6
327	A lot of older patients have stiff joints	230 50.3	84 18.4	34 7.4	57 12.5	52 11.4
328	Older patients tend not to tell health professional if they are incontinent	216 47.3	95 20.8	34 7.4	69 15.1	43 9.4
329	Older patients experience changes in bowel elimination patterns in the acute care setting	225 49.2	93 20.4	34 7.4	54 11.8	51 11.2
330	Older patients are more likely to have open surgical procedures than laparoscopic surgery	210 46	92 20.1	42 9.2	65 14.2	48 10.5
331	Older patients become confused after operations/procedures	238 52.1	87 19	26 5.7	58 12.7	48 10.5
332	Older patients are more likely to develop post-operative complications	218 47.7	101 22.1	24 5.3	69 15.1	45 9.8
333	Older patients are particularly prone to nosocomial infections	234 51.2	86 18.8	22 4.8	54 11.8	61 13.3
334	Early discharge is difficult to achieve with older patients	252 55.1	76 16.6	23 5	55 12	51 11.2

5.4.1. Regression analysis of nurse's attitude toward care of elder patient.

In order to identify variables that are significantly associated with nurse's attitude toward care of elder patient both binary and multiple logistic regressions were used. Variables that have significant association at binary logistic regressions ($P < 0.05$) were again analyzed by multivariate logistic regression and variables with p value of less than 0.05 were considered significant.

On bivariate analysis sex, age, marital status, level of education, year of experience, living with elder, adequacy of physical space to care for elder patient, communicating with patient/family care giver and nurse's knowledge of care of elder patient were found to have significant association with nurse's attitude toward care of elder patient ($p< 0.05$, 95% C.I).

In multivariate logistic analysis, sex, marital status, level of education, year of experience in nursing profession, adequacy of physical space to care for elder patient, communicating with patient/family care giver and nurse's knowledge of care of elder patient were significantly associated with nurse's attitude toward care of elder patient ($p<0.05$, 95% C.I).

Regarding sex of participants, male participants were 1.7 times more likely to have positive attitude than female participants [AOR:1.7; 95% C. I (1-3.1)]. In addition, married nurse participants were 2.4 times more likely to have positive attitude than single nurses [AOR:2.4; 95% C. I (1.3-2.4)]. Nurse participants who have BSc degree in nursing were 5.5 times more likely to have positive attitude than those who have diploma in nursing [AOR:5.5; 95% C. I (1.5-20)]. Similarly, Nurse participants who have MSc degree in nursing were 5.5 times more likely to have positive attitude than those who have diploma in nursing [AOR:7.5; 95% C. I (1.3-24)]. Regarding year of experience, those nurse participants who have 5- 9 year of experience in nursing profession were 2.1 times more likely to have positive attitude than those who have 1-5 year of experience in nursing profession [AOR:2.1; 95% C. I (1-4)]. Similarly, those nurse participants who have ≥ 10 year of experience in nursing profession were 1.7 times more likely to have positive attitude than those who have 1-5 year of experience in nursing profession [AOR:1.7; 95%C. I (0.6-4.2)].

Nurse participants who have been working in adequate space while giving care of elder patient were 4.8 times more likely to have positive attitude compared to those who were not working in adequate space [AOR: 4.8; 95%C. I (2.7-8.6)]. Similarly nurses who like to communicate with elder patient/family care giver were 4.1times more likely to have positive attitude than nurses who didn't like to communicate with elder patient/family care giver [AOR:4.1; 95%C. I (2.3-7.1)]. Knowledge toward care of elder patient was another variable, which was significantly associated with attitude toward care of elder patient. Accordingly, those nurse participants who have good knowledge toward care of elder patient were 3.7 times more likely to have positive attitude compared to those who have poor knowledge toward care of elder patient [AOR:3.7; 95% C.I (2-6.8)].

Table 8: - Regression analysis of attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)

Variable	**Attitude toward care of elder patient**				**COR(95% CI)**	**AOR(95%CI)**
	Positive attitude		**Negative attitude**			
	N	**%**	**N**	**%**		
Sex						
Male	63	27.2	169	72.8	1.9(1.2-2.9)***	**1.7(1-3.1)***
Female	37	16.4	188	83.6	1	1
Age						
20 -29	36	13.3	234	86.7	1	
30-39	52	33.1	105	66.9	3.2(1.9-5.2)***	
≥40	12	40	18	60	4.3(1.9-9.7)***	
Marital status						
Single	50	15.9	264	84.1	1	1
Married	48	35.8	86	64.2	3(1.8-4.6)***	**2.4(1.3-4.5)*** **
Divorced	2	22.2	7	77.8	1.5(0.3-7.4)	0.4(0.04-4.8)
Level of education						
Diploma in Nursing	4	6.6	57	93.4	1	1
Degree in Nursing	78	22	276	78	4(1.4-11.4)***	5.5(1.5-20)***
Masters in Nursing	18	42.9	24	57.1	10.6(3.2-35)***	5.5(1.3-24)**

Table 8: - Regression analysis of attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't……)

Year of experience						
1-5 year	38	12.8	260	87.2	1	1
5.1- 9.9 year	41	37.3	69	62.7	4(2.4-6.8)***	2.1(1-4)*
≥10	21	42.9	28	57.1	5.1(2.6-9.9)***	1.7(0.6-4.2)*
Ever lived with elder						
Yes	76	25.9	217	74.1	2(1.2-3.3)***	
No	24	14.6	140	85.4	1	
Type of unit/ ward						
Medical ward	19	23.5	62	76.5	1	
Surgical ward	20	20	80	80	0.8(0.4-1.6)	
OR	17	27	46	73	1.2(0.5-2.5)	
EW	17	28.3	43	71.7	1.2(0.6-2.7)	
Adult ICU	18	31.6	39	68.4	1.5(0.7-3.2)	
Oncology ward	2	7.4	25	21.7	0.2(0.05-1.2)	
Gynecology ward	0	0	6	100	0.00	
Neurologic unit	4	15.4	22	84.6	0.6(0.18-1.9)	
Orthopedic ward	3	8.1	34	91.9	0.3(0.07-1.04)	
Type of hospital						
Academic	91	21.9	324	78.1	1.03(0.4-2.2)	
Non- academic	9	21.4	33	78.6	1	

Table 8: - Regression analysis of attitude toward care of elder patient among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457) (con't……)

Following any form of elder care guideline/policy						
Yes	38	26	108	74	1.4(0.9-2.2)	
No	62	19.9	249	80.1	1	
Working in an adequate space						
Yes	58	42.6	78	57.4	4.9(3.1-7.9)***	4.8(2.7-8.6)***
No	42	13.1	279	86.9	1	1
Communicating with elder patient/ family care giver						
Yes	58	42.6	78	57.4	5.6(3.4-8.9)***	4.1(2.3-7.1)***
No	42	13.1	279	86.9	1	1
Knowledge of care of elder patient						
Good knowledge	59	45	72	55	5.6(3.5-9.1)***	3.7(2-6.8)***
Poor knowledge	41	12.6	285	87.4	1	1

6. DISCUSSION

This study aimed at assessing knowledge, attitude and associated factors among nurses working in selected governmental hospitals in Addis Ababa. The finding of this study revealed that 326(71.3%) of nurses' have poor knowledge toward care of elder patient. This is higher than the study conducted in Iran, Isfahan, Al-Zahra hospital which showed 67.2% of nurses had poor knowledge toward care of elder patient (23). It is much higher than the study conducted in acute-care teaching hospital in northern California, which showed that 20% of the nurses had poor knowledge toward care of elder patient (25) and the study done in Slovak Republic, Derer Faculty Hospital in which only 9% of nurses had poor knowledge (24). Similarly, study on Portuguese nurses investigated that only 21.2% of the registered nurse had a mean score > 0.5, which indicated poor knowledge level (27).

The finding of this study is less than the study conducted in Saud Arabia where overall nurses in the three major universities in Saudi Arabia had poor knowledge of care of elder patient (18). Similarly, the study conducted in Netherland investigate that in all groups a substantial proportion of participants demonstrated insufficient knowledge about older patient's care (17). In addition, study in a Swiss emergency department showed the overall score in the knowledge test is considered poor (26), but, the study conducted in Nigeria, Calabar teaching hospital showed that 96% of nurses have good knowledge of nursing care of elder (5). This discrepancy might be due to lack of trainings on area of elder patient care, cultural, socio-demographic differences, differences in work experience, study time gap and study setting difference. Lack of learning resources (nursing journals) for nurses to up-date their knowledge could also be another reason for the poor level of nurses' knowledge.

The finding of this study showed that age was significantly associated with knowledge toward care of elder patient (p-value <0.05, 95% C.I). Nurse participants who were between age of 30-39 were 3 times more likely knowledgeable than those who are between age of 20-29 (AOR=3, 95% C. I=1.5-5.4). similarly, Nurse participants who were ≥40 years were 5 times more likely knowledgeable than those who are between age of 20-29 (AOR=5, 95% C. I=1.3-17.4). This might be due to most of participants who are in higher age have also more experience in care

of elder patient which might in turn improve their knowledge of care of elder patient. The result of this study is in line with the study carried out in Korea which revealed that there were significant and strong positive correlation between nursing knowledge and age (34). The study done in Slovak Republic, Derér Faculty Hospital indicated that there was statistical association between age and knowledge (p. < 0.01). The nurses aged 41–50 had poor knowledge and the younger nurses (20–30 years), (31-40) and the nurses over 50 showed good knowledge (24). In addition, the study in acute care hospitals in Israel Showed Significant positive correlation ($p<.05$) between age and nurses knowledge of elder patient care (37). This implies that care of elder patient can be improved if nurses with higher age care for elder patient.

Regarding year of experience, the finding of this study reveal that nurse participants who have 6- 10 year of experience in nursing profession were 2.4 times more likely knowledgeable than those who have 1-5 year of experience in nursing profession (AOR=2.4, 95% C. I= 1.3-4.6). Similarly, those nurse participants who have > 10 year of experience in nursing profession were 3.2 times more likely knowledgeable than those who have 1-5 year of experience in nursing profession. (AOR= 3.2, 95% C. I=1.2-9). This suggests nurses with more experiences might have more opportunity to gain access to up-to-date information about care of elder patient gradually from their daily observations, practices and staffs. The results in this study are consistent with the study conducted in Netherland which investigated that year of experience in nursing profession had significant association with knowledge toward care of elder patient. There was smaller increase of knowledge among nurses with fist 5 years of working experience. The group of nurses having 6-15 years of experience has the highest mean knowledge score. The mean difference in knowledge between nurses remains significant ($p < .001$) in the first 15 years of experience, but is no longer significant between nurses having >15 years of experience ($p = .257$) (17).

It is also similar with the study carried out in Korea, geriatric hospitals which revealed that there were significant differences in nursing knowledge due to duration of employment. The higher duration of the employment, the better the knowledge of elder patient care (34). This implies that nurse's knowledge toward care of elder can be improved by employing experienced nurses on care of elder patient. The finding of the study is different from the study done in Slovak

Republic, Derér Faculty Hospital which investigated that there was slight negative correlation (r= -0.239) between knowledge of elder patient care and length of experience in nursing profession. It was concluded that the shorter practice the nurse has, the better her/his knowledge is of the geriatric care (24). This difference might be due to lack of elder care training, difference in a tool used to assess knowledge and difference in socio-economic characteristics.

The finding of this study revealed that 78.9% of nurses have negative attitude toward care of elder patient. This is less than study conducted in Iran, Isfahan Al-Zahra hospital where 89.2% of nurse respondent had negative attitude toward care of elder patient (23), Similarly, research conducted in Saud Arabia reported nurse's overall negative attitudes toward care of older patients (18). In addition, Studies included in a systematic review of Nurses attitude towards older patient care by Liu et al presented a slightly more negative attitude of nurses toward care of older patients. According to this review, the study conducted in Taiwan, Canada, Jordan, Australia, USA on attitude toward care of elder patient rated the attitude toward elder people as negative (6). It seems that this difference in nurses' attitude toward care of elder patients can be come from nurses' knowledge and can also be due to geographical, cultural and social variable which govern the research environments or be due to difference in question measuring nurse's attitude toward care of elder patient.

The finding of this study is higher than the study conducted in Iran where 54.3% of nurses working in the city of Ilam had negative attitude (33), Study in Iran, Zanjan hospitals where 3% of nurses had negative attitudes toward the care of elderly (30), the study done in Portuguese where 18.8% of the nurses had negative attitudes (27). It is also higher than the study done in Slovak Republic, Derér Faculty Hospital where 28% of nurses had negative attitude toward care of elderly (24) and the study by Liu et al (2015) where 11.3% of nurses had negative attitude. The study in Finland investigated overall positive attitude toward nurse's elder patient care (30) and The study conducted in central Erzurum, Turkey revealed overall (98.83%) positive attitude of nurses toward older patients care (35). The study conducted in Nigeria on Nurses' attitude towards the care of the elderly investigated that nurses had a high positive attitude towards the care of elderly patients and they all agreed to feel good about care of elderly

patients (28). These differences can be due to different measurement tool, lack of elder care training, difference in socioeconomic background, lack of formal geriatric care education and absence of independent geriatric unit.

The finding of the study revealed that sex of participants was significantly associated with nurse's attitude toward care of elder patient ($p<0.05$, 95% C.I). Male participants were 1.7 times more likely to have positive attitude than female participants (AOR=1.7, 95% C. I=1-3.1). This is similar with the study conducted in medical hospital, Eskisehir Osmangazi University, Turkey which found that the total positive discrimination score of males was higher than that of females but that this difference was not statistically significant ($p>0.05$) (1). Similarly, a systematic review conducted in Saud Arabia indicated that male nurses working in acute-care units had more positive attitudes towards older people care, compared to female nurses (18). Another study conducted in Iran on attitudes toward elderly care among nurses working in the city of Ilam showed significant difference ($P < 0.05$) between attitudes toward the elderly care and gender, according to finding of the study male nurses had more positive attitude than female nurses (33). This is inconsistent with the study conducted in Iran,Isfahan, Al-Zahra hospital which investigated attitudes in male nurses were meaningfully more negative than females ($p<0.05$) (23), but the study in Iran, Zanjan hospitals investigated that there were not significantly difference between gender and attitude toward care of elder patient (32). This discrepancy could be due to different in sample size and different in cultural background.

The finding of current study revealed that married nurse participants were 2.4 times more likely to have positive attitude than single nurse's participants (AOR=2.4, 95% C. I=1.3-2.4). This might be due to married nurses have more experience in care of elder patient than single nurse participants that helped them to have positive attitude. The result of study is similar with the study conducted in Iran, which showed significant association ($P < 0.05$) between attitudes toward the elderly care and marital status. According to finding of the study, married nurses had more positive attitude than single nurses (33). This is different from the study conducted in Turkey which found that married nurses had high negative attitude than single nurses($p=0.02$) (1), but The study in Medical-Surgical Wards in Zanjan hospitals investigated that there were not significantly different in subgroups of marital status and attitude toward care of elder patient

(32). Similarly, a systematic review conducted in Saud Arabia concluded that nurse's marital status was not associated with their attitudes (18). The possible reason for this difference might be due to difference in sampling population and difference in measurement tool used to assess attitude toward care of elder patient.

The finding of this study investigated that level of education has significant association with nurse's attitude toward care of elder patient. Nurse participants who have BSc degree in nursing were 5.5 times more likely to have positive attitude than those who have diploma in nursing (AOR=5.5, 95% C. I=1.5-20). Similarly, Nurse participants who have MSc degree in nursing were 5.5 times more likely to have positive attitude than those who have diploma in nursing (AOR=5.5, 95% C. I=1.3-24). This implies that care of elder patient can be improved if nurses who have advanced educational level are employed to care for elder patient. The result of this study is in line with the systematic review of health professional knowledge and attitude toward care of elder patient conducted in Saud Arabia, which reported an association between advanced education levels and nurse's attitudes toward care of elder patient. The study indicated that positive attitudes toward care of older people increased with higher levels of education that include university degree and postgraduate degree (18).

Study conducted in Turkey medical hospital of Eskisehir Osmangazi University suggested that holders of postgraduate degree had positive attitude toward care of elder patient compared to graduate degree. ($p=0.02$) (1). Similarly, the study on Nurses' attitudes toward older Patients in Acute Care in Israel revealed that there was positive correlation between attitude and current level of nursing education($p<0.05$) (37). In addition, Study in United States found that the continuous education program promote positive attitudes toward older people care (41).The possible reason is that those who have higher educational level might have more knowledge which in turn helps them to enhance their attitude. In contrast to finding of this study, the study in Iran, Zanjan hospitals investigated that there were not significantly association between level of education and attitude toward care of elder patient (32). The possible reason is geriatric care coarse might not be incorporated in to the education.

This study investigated that year of experience in nursing profession was significantly associated with nurse's attitude toward care of elder patient. Nurse participants who have 5- 9 year of experience in nursing profession were 2.1 times more likely to have positive attitude than those who have 1-5 year of experience in nursing profession (AOR=2.1, 95% C. I=1-4). Similarly, those nurse participants who have ≥ 10 year of experience in nursing profession were 1.7 times more likely to have positive attitude than those who have 1-5 year of experience in nursing profession (AOR=1.7, 95%C. I=0.6-4.2). In a similar way, Study in Finland and Ankara University, Gaza, Turkey by Polate et al. 2014 found that Nurses with past older people care experience and more than 10 years of elder patient care experience had more positive attitudes than those with current experience or less than 10 years of elder care experience (30, 39).

The result of this study is also in similar with the study in Israel which Showed Significant positive correlation ($p<.05$) between year of experience and attitude toward care of elder patient (37). It is also similar with the study conducted in Iran, in the city of Ilam, which showed that there was significant positive correlation ($P < 0.05$) between attitudes toward the elderly care and work experiences **(**33). The study conducted in central Erzurum revealed that nurses experienced difficulties in elder patient care due to lack of experience in older patient care (37). This might be due to the fact that those who have long duration of work experience have also more contact with elder patient which help them to improve their attitude and it implies that care of elder patient can be improved if nurses who have more year of experience care for elder patient. The finding of this study is different the study in Zanjan hospitals investigated that there were not significant association between year of experience and attitude toward care of elder patient (30). Similarly, study conducted in Ireland reported no significant association between a person's length of experience and attitudes toward care of elder patient (40). This might be due to difference in ageism, study time gap and study setting difference.

The result of current study also investigated that adequacy of physical space and nurse's communication with elder patient/family care giver have significant association with nurse's attitude toward care of elder patient ($p<0.05$, 95% C.I). Nurse participants who have been working in adequate space while giving care of elder patient were 4.8 times more likely to have positive attitude compared to those who were not working in adequate space (AOR=4.8,95%C.

I=2.7-8.6). Similarly nurses who like to communicate with elder patient/family care giver were 4.1 times more likely to have positive attitude than nurses who didn't like to communicate with elder patient/family care giver (AOR=4.1, 95%C. I=2.3-7.1). This is congruent with the study conducted in Turkey central Erzurum which revealed significant association between related factors (physical space, communication with elder patient/their family care giver and attitude of nurses toward older patients care ($p<0.05$). The study concluded that nurses were facing difficulty in elder patient care due to inadequacy of physical space/room. The study result also investigated that nurses who like to communicate with elder patient/family caregiver had more positive attitude than who didn't like to communicate (35). The possible reason was working in an adequate space reduces nurses overload in care of elder patient that might help them to have positive attitude. In addition, communicating with elder patient helped them to understand elder people problem that makes them to be passionate in care of elder patient.

Knowledge toward care of elder patient was another variable, which was significantly associated with attitude toward care of elder patient. Accordingly, those nurses who have good knowledge toward care of elder patient was 5.1 times more likely to have positive attitude compared to those who have poor knowledge toward care of elder patient (AOR=5.1, 95%=2.8-9.4). This implies that nurse's attitude toward care of elder patient can be enhanced if knowledgeable nurses care for elder patient. The result of this study is in agreement with the studies conducted in Portuguese by Almeida Tavares *et al. (2015*) and in Beijing, china by Lui et al (2015) which showed that knowledge of ageing and older adult care played a role in more positive attitudes toward care of elder patient (27, 31). Another research conducted in Taiwan investigated that the negative attitude towards older patients is caused by lack of geriatric knowledge (36). This is due to the fact that those who have knowledge of care of elder patient understand problems of elder people which might in turn enhance their attitude. On the other hand, the study in northern and central regions of hospitals in Portugal demonstrate no significant association ($p>0,05$) between geriatric care knowledge and Attitudes toward care of elder patient (38). These differences can be due to different measurement tool, lack of elder care training, difference in socioeconomic background, and lack of formal geriatric care education.

7. STRENGTH AND LIMITATION OF THE STUDY

7.1 Strengths of The Study

The study could be said the first in assessing nurses' knowledge, attitude and associated factors toward care of elder patient in Ethiopia. Questionnaire was pretested and corrected accordingly to make the tool easily understandable. The questionnaire used to collect data was up-to-date, recently developed and used at first time. The study incorporated large sample size and the response rate was high.

7.2 Limitations of the study.

The fact that no study was conducted so far in Ethiopia on this topic, no enough literature was available to discuss on national context. Since self-administered questionnaires were used to collect data; the study may be subjected to response bias from each respondent. The study was cross sectional; therefore, it was difficult to know which occurred first the exposure or the outcome and qualitative data collection approach was not considered.

8. CONCLUSION AND RECOMMENDATION

8.1 Conclusions

This study was conducted to assess level of nurses' knowledge, attitude and associated factors toward care of elder patient. Generally, the study showed that: Majority of nurses had poor knowledge regarding care of elder patient, Year of experience in nursing profession and age of nurse participants had significant association with nurses' Knowledge toward care of elder patient, Majority of nurses had negative attitude toward care of elder patient. Level of education, year of experience in nursing profession, sex, marital status, adequacy of physical space, communicating with patient/family care giver significantly associated with nurse's attitude toward care of elder patient and Nurse's knowledge of care of elder patient had significant association with attitude toward care of elder patient.

8.2 Recommendation

The following recommendations are put forward to improve nurses' knowledge and attitude toward care of elder patient

To FMOH

The FMOH should provide trainings for nurses to enhance their knowledge and improve their attitude on care of elder patient. Policy makers should prepare policies and guidelines to improve nurses care of elder patient.

To hospital managers

Hospital managers should recruit nurses who have experience on care of elder patient and should provide independent room for care of elder patient

To nursing department

Design curriculum regarding geriatric nursing care. Access new knowledge and develop new skills related to the teaching of care of older adults. Teach students how to manage acute and chronic health problem of elder people. Nursing department should provide Geriatric nursing as one of specialty track.

To researcher

Future research needs to explore the effects of additional variables that were not measured in the current study, which can also directly or indirectly influence nurse's knowledge and attitude

toward care of elder patient. Future research's also need to focus on nurses practice toward care of elder patient and quantitative approach of data collection.

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ANNEX I:-INFORMATION SHEET

Introduction: - My name is _____. I am working as a data collector in the research conducted by Sanbato Tamiru (BSc.N), who is conducting this research entitled"Nurses knowledge, attitude and associated factors toward care of elder patient" for the partial fulfillment of his Master degree in Adult Health nursing specialty track in Addis Ababa University. For this study you are selected as a participant and before getting your consent or permission of your participation you need to know all necessary information related to the study. Thus, this, information will be detailed as

Objective: -Assessment of Knowledge and Attitude towards Care of Elder Patient and Associated Factor among Nurses Working in Adult Acute Care Unit in Selected Governmental Hospital of Addis Ababa, Ethiopia, 2018

Name of advisor Mr.: -Zeleke Argaw (MSCN) and Yohannes Ayalew (MSCN, PHD fellower)

Name of the organization: - Addis Ababa University, College of health sciences, School of Allied health sciences, Department of nursing and midwifery.

Name of the Sponsor: - Addis Ababa University.

Participants: - Selected nurses working in five governmental hospitals of Addis Ababa namely Black lion specialized hospital, St. Paul specialized hospital, Rasdesta hospital, menilik II hospital, and Yekati 12 hospital.

Confidentiality: All information you give will kept confidential and will not be accessible to any third party. You are not asked to write your name on the questionnaire sheet so that you will not be identified

Risks*:* The procedure does not bear any physical or psychological trauma on you. You will not forced to respond to the information you do not know.However, by participating in this research project, you may feel that it is time consuming, wasting about 30 minutes. We hope you will participate in the study for the sake of the benefit of the research result

Benefits: For your participation in the study, no payment will grant. However, participating in the study and giving your information to questions asked will have great input in efforts to identify knowledge, attitude and associated factors toward care of elder patient and the result of the study will help in improving nurses care of elder patient.

Right to refuse or withdraw: - Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you feel discomfort with the question, it is your right to drop it any time you want. If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator and advisor**.**

Person to contact:

If you have any question to ask, please contact

Name-SanbatoTamiru;

Phone No:0975251660

E-mail: tsanbato@yahoo.co

ANNEX II: - CONSENT FORM

I have read all the process and the objective of the study. I am giving my consent to participate in the study entitled "Assessment of Knowledge and Attitude Towards Care of Elder Patient and Associated Factor Among Nurses Working in Adult Acute Care Unit in Selected Governmental Hospital of Addis Ababa, Ethiopia, 2018**".** I have been informed that the purpose of the study. I have understood that participation in this study is entirely voluntarily. I have told that my answers to the questions will not give to anyone else and no reports of this study ever identify me in any way. I have also informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks.

_____ Yes, I want to participate in the study (Please go to the next page).

_____ No, I do not participate in the study (Thank you very much!).

Witness: Signature_____ Date _____

Data facilitator

Name_____Signature_____Date____/_____/____

Result:

1. Questionnaire completed _____
2. Questionnaire partially completed _____
3. Participant refused _____
4. Others (please Specify) _____

Checked by Supervisor:

Name_____Signature_____Date____/____/__

ANNEX III: - ENGLISH VERSION QUESTIONNAIRES

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF ALLIED HEALTH SCIECE

DEPARTMENT OF NURSING AND MIDWIFERY

Questionnaire prepared to collect data on Assessment of Knowledge and Attitude towards Care of Elder Patient and Associated Factor among Nurses Working in Adult Acute Care Unit in Selected Governmental Hospital of Addis Ababa, Ethiopia, 2018

This questionnaire has four sections: section 1 is about Socio-demographic Information, Section 2 is about nurse's knowledge toward elder patient care, Section 3 is about nurse's attitude toward elder patient care, and section 4is about factors influencing nurse's knowledge and attitude toward care of elder patient

Please read each item carefully and give your honest response to each item. If you overlook any item without response, it will affect the study. So, please check that you have given response to all items.

I thank you for your genuine responses and cooperation.

Section I: Socio- demographic Information **Instruction: Please provide appropriate answer in front of each question**.		
S/N	**Items**	Response
101	Name of Hospital	_____
102	What is your sex?	1. Male 2. Female
103	How old are you?	_____(in years
104	What is your marital status?	1. Single 2. Married 3. Widowed 4. Divorced 5.Separated 6. cohabited
106	What is your level of Education?	1. Diploma in nursing 2. Degree in nursing 3. Masters in nursing
107	Have you ever lived with elder people aged 60 years and above?	1.yes 2.No
108	How long is your experience in nursing profession?	_____(in year)
109	What is Type of unit/ward you are working in?	1.Medical wad 2.Surgical ward 3.Operation room 4. Emergency ward 5. Adult ICU 6. Oncology ward 7. Gynecology ward 8. Neurologic unit 9. Other_____

Section II: -Nurses knowledge toward elder patient care.

For each statement, please answer "True" or "False "by ticking the mark sign(✓)in front of each item and under the alternative (true/false)

S/N	Items	True	False
201	Forgetfulness, concentration issues and indecisiveness are parts of aging rather than indicators of depression.		
202	Urinary incontinence in an older person may indicate that the person is suffering from a urinary tract infection.		
203	Patients with a cognitive disorder, such as dementia, are at increased risk for delirium		
204	Malnutrition can have negative effects on thinking and observation skills		
205	In general, older people are more sensitive to medication because their kidney and liver functions are declining		
206	Meeting with families during patient assessment is only required for persons suffering from dementia		
207	For older people, bed rest is important to enhance recovery		
208	Patients rarely remember that they were anxious and/or restless during delirium		
209	Older people need less fluid because they exercise less.		
210	Asking patients whether they have fallen in the past 6 months is a good way of assessing increased risk of falling.		
211	Pressure that cuts off the blood supply to tissue for two hours may result in pressure ulcers		
212	Depression is recognized in older people less frequently than it is in younger people		
213	Lowering the frequency of a medication is an effective intervention to achieve (medication) adherence by patients		
214	Incontinent patients must have their soiled clothing changed but do not need to be placed on the toilet afterwards.		
215	It is good to have older people drink more often, because they have a reduced thirst sensation.		

Section II: -Nurses knowledge toward elder patient care. (Con't….)

216	In the case of delirium, bright lighting should be used to illuminate all of the corners of the room		
217	Medication may cause geriatric problems such as memory deficits, incontinence, falling and depression		
218	Overburdening of family caregivers may lead to abuse of the person for whom they are providing care		
219	It is good to provide extensive instruction about how to complete tasks to patients suffering from apraxia		
220	When speaking to hearing-impaired older patients, it is best to speak at normal Volume.		
221	An older person with a BMI of >25 cannot be undernourished		
222	In the case of difficulty swallowing, all medicines must be ground to ensure that patients ingest them		
223	In the case of depression, memory problems may occur		
224	Most family caregivers do not need additional support from homecare services		
225	As a nurse, you have to speak clearly into the ear of the hearing-impaired older Patient		
226	Pain medication should be administered to older people as little as possible, due to the possibility of addiction		
227	We identify pressure ulcers only if blister formation or abrasions have occurred		
228	In the case of delirium, activities should be spread out evenly over the day.		
229	The risk of falling is higher for people in the hospital setting compared with those who are living at home.		
230	Stress incontinence may occur in patients who are not capable of opening their own trousers		

Section III: -Nurses attitude toward elder patient care

Please circle the number that you consider as best option on each question.

(SD = strongly disagree; D = Disagree; U = Unsure; A = Agree; SA = strongly agree)

S/N	Items	SD	D	U	A	SA
301	Do you like to care for older patients?	1	2	3	4	5
302	Do you think older patients are confused?	1	2	3	4	5
303	Do you think Older patients pretend not to hear you	1	2	3	4	5
304	Older patients are a nuisance to care for	1	2	3	4	5
305	Older patients are more likely to be depressed than younger patients	1	2	3	4	5
306	Older patients have to follow special diets	1	2	3	4	5
307	Older patients do not know the actions and interactions of their medications	1	2	3	4	5
308	Older patients require less pain relieving mediation than younger patients	1	2	3	4	5
309	Older patients become addicted to sleeping medications easily	1	2	3	4	5
310	Incontinent patients are bothersome	1	2	3	4	5
311	Urinary incontinence is part of the aging process	1	2	3	4	5
312	Older patients are more concerned with their bowel habits than younger patients	1	2	3	4	5

Section III: -Nurses attitude toward elder patient care. (Con't….)

313	Elder patients are embarrassed when their bodies are exposed	1	2	3	4	5
314	Too many older patients receive life-sustaining treatment	1	2	3	4	5
315	Older patients have more discharge problems than do younger patients	1	2	3	4	5
316	At the time of discharge older patients are likely to be more dependent than younger patients	1	2	3	4	5
317	Older patients require placement in long term care following a hospital admission	1	2	3	4	5
318	Older patients have extensive lengths of stay and take up beds that could be used for sicker patients	1	2	3	4	5
319	There are too many older patients in acute care hospitals	1	2	3	4	5
320	It would be a good idea for all hospitals to have an acute geriatric unit	1	2	3	4	5
321	Older patients are likely to be on more medication when admitted to the hospital than younger patients	1	2	3	4	5
322	Older patients become confused in a new setting	1	2	3	4	5
323	Older patients feel isolated in the acute care setting	1	2	3	4	5
324	In the hospital, eating and drinking are the most common activities performed by older patients	1	2	3	4	5
325	Older patients have more skin problems than younger patients	1	2	3	4	5

Section III: -Nurses attitude toward elder patient care. (Con't….)

326	Older patients are more likely to require assistance with mobility than younger patients	1	2	3	4	5
327	A lot of older patients have stiff joints	1	2	3	4	5
328	Older patients tend not to tell health professional if they are incontinent	1	2	3	4	5
329	Older patients experience changes in bowel elimination patterns in the acute care setting	1	2	3	4	5
330	Older patients are more likely to have open surgical procedures than laparoscopic surgery	1	2	3	4	5
331	Older patients become confused after operations/procedures	1	2	3	4	5
332	Older patients are more likely to develop post-operative complications	1	2	3	4	5
333	Older patients are particularly prone to nosocomial infections	1	2	3	4	5
334	Early discharge is difficult to achieve with older patients	1	2	3	4	5

Section IV: -Factors influencing nurse's knowledge and attitude toward care of elder patient

S/n	Items	Response
401	What is Type of hospital you are working in?	1.Academic 2.non-academic
402	Do you follow any type of elder care guideline/policy while you give care for elder patient	1.Yes 2.No
403	Have you ever worked in an adequate space/room when you give care for elder patient?	1.yes 2.no
404	Do you like to communicate with elder patient or their family caregiver when you provide care for elder patient?	1.yes 2.No