

Knowledge and Attitude towards Care of Elder Patients and Associated Factors among Nurses Working in Government Hospitals in Addis Ababa, Ethiopia

Zelege Argaw¹, Sanbato Tamiru², Yohannes Ayalew³, Teshome Habte⁴

¹ School of Nursing and Midwifery , College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

² Mettu University, Faculty of Health Science, Department of Nursing, Ethiopia

³ School of Nursing and Midwifery , College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

⁴ School of Nursing and Midwifery , College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

Authors Email address and Telephone number:

*¹Zelege Argaw Menji (Email address: zelegeargawm@yahoo.com or zelege.argaw@aau.edu.et
Telephone number: +251911478796

² Sanbato Tamiru Dingata (Email address: tsanbato@yahoo.com Telephone: +251975251660

³ Yohannes Ayalew Bekele (Email address: yayalew58@gmail.com or yohannes.ayalew@aau.edu.et
Telephone number: +251911032747

*⁴Teshome Habte Wurjine (Email address: teshome.habte@aau.edu.et or teshomeh497@gmail.com
Telephone number: +251911436150

*Corresponding author

¹Zelege Argaw Menji (Email address: zelegeargawm@yahoo.com or zelege.argaw@aau.edu.et

⁴Teshome Habte Wurjine (Email address: teshome.habte@aau.edu.et

Abstract

Background:-Quality of nursing care provided to elder people depends on nurse's knowledge and attitude. However, observations show that relational gaps exist resulting in negative elderly patients' outcomes. **Objective:** the aim of this study was to explore knowledge, attitude and associated factors toward care of elder patient among nurses working in adult acute care unit of selected governmental hospitals of Addis Ababa, Ethiopia. **Methods:** The study conducted in Addis Ababa, the capital city of Ethiopia with estimated about 6.6 million population by 2017. The city has 17 governmental hospitals and 34 private hospitals. **Study design:** Institutional based cross sectional study design used to assess nurses working in adult acute care unit in five randomly selected government Hospitals from March 2018 to June 2018. **Participants:** Total number of nurses selected in the adult care unit of the hospitals 497. To provide evidence for this work, institution based cross-sectional study design and multistage sampling technique employed to select the study subjects in each hospital. **Data collection & analysis procedure:** Data gathered by using structured and pretested self-administered questionnaire after Ethical clearance and approval obtained from Addis Ababa University, Health Bureau and administrator of each study hospitals including consent obtained from those who were meet the inclusion criteria. The collected data entered and analyzed by using SPSS version 23. Descriptive statistics, Bivariate and multivariate logistic regression analyses was undertaken. **Result:** 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. 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. Therefore, 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

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]. 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. [2].

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. [3].

An estimated 100,000 people worldwide die each day of age related causes. Care of the elderly is the fulfillment of the special needs and requirements that are unique to senior citizens. The care of the elderly is multidimensional and these include physical, emotional, spiritual and social care [4]. Despite the rise in demand of nursing care of elder, the care of elder patient has not been desirable area of nursing practice [5, 6]. Nurses are more preferred to work with younger population than providing care for elder patient. Such attitudes towards caring for older adults originate from nurses' exposure to pervasive societal stereotypes and ageist beliefs [7].

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 [8]. Nurses Knowledge regarding older people studies indicate that nurses have low to average knowledge with the care of elder patient [9]. 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 [10]. The study conducted in three major universities in Saudi Arabia on health professionals' knowledge and attitudes toward older people in primary care had poor knowledge of care of elder people [11]. Similarly, the study conducted in Iran, Isfahan, Al-zahra hospital nursing care to elder patients, revealed 67.2% and 32.8% of nurses had poor and good knowledge respectively [12].

The negative attitude of nurses will have a negative impact on the quality of care and on the quality of life of older patients [13]. 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 [5].

Inadequate knowledge and negative attitude significantly affects the nursing care provision to elder patient. 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 [11].

In Ethiopia, the care of elder people are not addressed adequately due to the fact that lack of trained personnel, and well organized geriatric care unit and training institutions in the country. In addition to these, a research study has not conducted yet to address and alleviate problems related to geriatric care in the study area.

Research questions

- (1) What are nurses' knowledge and attitudes towards the care of elderly?
- (2) What is the perceived effect of staffing ratio on the care of the elderly?
- (3) What are the factors influencing the attitude of nurses in the care of the elderly?
- (4) What are other factors affect on the care of elderly patients?

2. Methods and materials

2.1. Study Setting

The study conducted in Addis Ababa city administration which is the capital city of Ethiopia with a total number of 6.6 million population according to the report of 2017 [14]. There are seventeen governmental secondary and tertiary hospitals in the city administration.

2.2. Study Design, Period, and Area

An institution-based cross-sectional study conducted on nurses working in adult acute care unit in five randomly selected government Hospitals from March 2018 to June 2018.

2.3. Eligibility Criteria

2.3.1. 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

2.3.2. Exclusion Criteria

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

2.4. Sample Size Determination

All nurses who are working in adult care units at the five selected hospitals were taken as a source population and the study population during data collection period who full fill the inclusion criteria.

Sample size calculated using a formula for single population proportion considering the following assumptions. Confidence level = 95%, Critical value $Z_{\alpha/2} = 1.96$, Degree of precision $d = 0.05$. The proportion (p) = 0.5 (no study in Ethiopia concerning knowledge and attitude of nurses toward care of elder patient). 10% contingency for possible non-response was considered. Total number of nurses in the adult care unit of selected hospitals (N) = 1164

Population correction formula; were used since the target population is less than 10 000. Accordingly, the sample size was 289. The final sample size using design effect (1.5), $nf = 289 \times 1.5 = 433$ then considering non-response rate of 10% the final sample size was 476.

2.5. Sampling technique and Sampling procedure

Multistage sampling technique employed to select the study subjects in each hospital. Five government hospitals in Addis Ababa (Tikur Anbessa Specialized Hospital, St. Paul Millennium Medical College, Rasdesta Damtew hospital, Yekatit 12 hospital and Minilik II hospital) selected using simple random sampling (SRS). The sample size proportionally allocated in to each hospital based on the number of nurses in the hospitals. 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.

2.6. Data Collection tool

The instrument used to collect data for knowledge question adapted from the validated tool developed in Netherlands by Jorean Duken. The questionnaire divided into three sections: demographic data, Nurses' knowledge and attitude toward elder patient care. Demographic data included sex, age, marital status, educational level and their working unit. Nurses' Knowledge about Older Patients-Quiz (KOP-Q) used. The KOP-Q contains 30 dichotomous items (true/false) measuring knowledge about nurse' scare of elder patient with every correct answer assigned 1 point and incorrect answer 0 points. Attitude questionnaire adapted from Older People in Acute Care Survey (OPACS) was used 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 obtained by summing score then dividing by 34.

2.7. Data Collection Procedure

Structured self-administered questionnaire used to collect data. The data collection procedure 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 collected at the five selected governmental hospitals from March to May 2018.

2.8. Data Processing and Analysis

The data coded, cleaned and entered into Epi-data manager 4.2 and exported to Statistical Package for Social Science (SPSS) version 23 for analysis. Binary logistic and multi-variable logistic regression analysis used to characterize the association between the variables. Odds ratio calculated to determine strength of association between dependent and independent variable. P- Value ≤ 0.05 used for statistical significance.

2.9. Data quality Assurance

Training given for data collectors and supervisors on the objective of the study, method, contents of the validated tool and how to maintain confidentiality and privacy of the study subject were intensively conducted. Data collected by five experienced staff nurses with diploma and above recruited from selected hospitals. Pre-test conducted on 24 nurses working in Zewuditu hospital before the actual data collection begins and necessary corrections made on the questionnaire. The collection of data checked by principal investigator on daily basis for any incompleteness and /or inconsistency. 4

3. Ethical consideration

Ethical clearance and approval obtained from Addis Ababa University, College of health sciences, school of Nursing and midwifery. Permission to conduct the research was obtained from Addis Ababa Health Bureau and each hospital involved

in the study. In addition, after explanation of the objective of the study, consent obtained from those who were meet the inclusion criteria and agreed to participate. Furthermore, affirmation that they could be free to withdraw consent and discontinue participation without any form of prejudices made. Confidentiality of information and privacy of participants assured for all the information provided

4. Result

4.1 Socio-Demographic Characteristics of Nurses

A total of 476 nurses working in the selected governmental hospitals were selected for this study, 457 were responded the questionnaire, 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.

Most participants 77.5% had first degree followed by 13.3% diploma holders. Most of the respondents (64.1%) had lived with elder people and most of(65.2%) had 1-5 year of experience. Respondent nurses were working in a wide range of clinical areas, with the highest percentage (21.9%) working in surgical wards.

4.2 Nurses' Knowledge toward Care of Elder Patient

Respondents were asked 30 knowledge test questions to assess their knowledge toward care of elder patient and they categorized in to two groups based on their score. Findings of this study revealed that the majority of nurses who participated in this study had poor knowledge score, 326 (71.3%) toward care of elder patient.

Table 1: Frequency distribution of nurses' knowledge score towards elder patients care working in adult acute care units of the selected governmental hospitals in Addis Ababa, Ethiopia, 2018(N=457)

Items	True	False	correct answer	Incorrect answer
	N (%)	N (%)	N (%)	N (%)
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)
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%
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%
Malnutrition can have negative effects on thinking and observation skills	337 73.7%	120 26.3%	337 73.7%	120 26.3%
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%
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%
For older people, bed rest is important to enhance recovery	179 39.2%	278 60.8%	278 60.8%	179 39.2%
Patients rarely remember that they were anxious and/or restless during delirium	216 47.3%	241 52.7%	241 52.7%	216 47.3%

Older people need less fluid because they exercise less.	195 42.7%	262 57.3%	262 57.3%	195 42.7%
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%
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%

3.3. Nurse's attitude toward care of elder patient

Most of 357(78.1%) of nurses have negative attitude and 100(21.9%) have positive attitude towards care of elder patient. 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.

Table 2. Frequency distribution of nurses' attitude score towards care of elder patients working in adult acute care units of the selected governmental hospitals in Addis Ababa, Ethiopia, 2018(N=457)

Items	Positive	Negative
Do you like to care for older patients?	289(63.2)	168(36.8)
*Do you think older patients are confused?	169(37)	288(63)
*Do you think Older patients pretend not to hear you	167(36.5)	290(63.5)
*Older patients are a nuisance to care for	143(31.3)	314(68.7)
*Older patients are more likely to be depressed than younger patients	130(28.4)	327(71.6)
*Older patients have to follow special diets.	115(25.2)	342(74.8)
*Older patients do not know the actions and interactions of their medications	147(32.2)	310(67.8)
*Older patients require less pain relieving medication than younger patients	139(30.4)	318(69.6)
*Older patients become addicted to sleeping medications easily	124(27.1)	333(72.9)
*Incontinent patients are bothersome	133(29.1)	324(70.9)
*Urinary incontinence is part of the aging process	137(30)	320(70)
Older patients are more concerned with their bowel habits than younger patients	206(45.1)	251(54.9)
Elder patients are embarrassed when their bodies are exposed	186(40.7)	271(59.3)

*Too many older patients receive life-sustaining treatment	141(30.9)	316(69.1)
Older patients have more discharge problems than do younger patients	182(39.8)	275(60.2)
At the time of discharge older patients are likely to be more dependent than younger patients.	170(37.2)	287(62.8)
Older patients require placement in long term care following a hospital admission	143(31.3)	314(68.7)

Table 3. Frequency distribution of OPACS among nurses working in adult acute care of selected governmental hospitals in Addis Ababa, Ethiopia, 2018(n=457)(con't....)

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

complications

Older patients are particularly prone to nosocomial infections	115(25.2)	342(74.8)
Early discharge is difficult to achieve for older patient.	106(23.2)	351(76.8)

= The result 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).

3.4. Association between nurses' Knowledge and attitude towards care of elder patient and independent variables

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

Bivariate and multivariate logistic regression analysis 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 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)].

II. Regression analysis of nurse' attitude towards care of elder patient and independent variables .

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 4.1 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)]. 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 4. Factors associated with nurses' attitude towards care of elder patient working in adult acute care units 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 5. Factors associated with nurses' attitude towards care of elder patient working in adult acute care units of the 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 6. Factors associated with nurses' attitude towards care of elder patient working in adult acute care units of the 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

5. Discussions

This study aimed to assess nurses' knowledge, attitude and associated factors among nurses working in selected governmental hospitals in Addis Ababa. Findings of this study revealed that 326(71.3%) of nurses' have poor knowledge toward care of elder patient. Whereas the study conducted in Nigeria, Calabar teaching hospital showed that 96% of nurses have good knowledge of nursing care of elder [4]. 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.

The finding of this study showed 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. This result 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 19. 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 [15]. 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 [16]. This implies that elder patient care 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.

This shown that the higher the duration of the employment, the better the knowledge of elder patient care [17]. This implies that nurse's knowledge toward care of elder can be improved by employing experienced nurses on care of elder

patient. This study finding 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 [15]. 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 [18]. Similarly, research conducted in Saud Arabia reported nurse's overall negative attitudes toward care of older patients [17]. 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 [5]. This difference in nurses' attitude toward care of elder patients might be due to from nurses' knowledge, 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.

This study finding is higher than the study conducted in Iran where 54.3% of nurses working in the city of Ilam had negative attitude [18]. Study in Iran, Zanzan hospitals where 3% of nurses had negative attitudes toward the care of elderly [20]. The study done in Portuguese where 18.8% of the nurses had negative attitudes [19]. 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 [16], and the study by Liu et al (2015) where 11.3% of nurses had negative attitude. However the study conducted in Finland investigated overall positive attitude toward nurse's elder patient care [20], and the study conducted in central Erzurum, Turkey revealed overall (98.83%) positive attitude of nurses toward older patients care [21]. 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 [22]. 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 [11]. 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 [23]. 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 ($p < 0.05$) [12], but the study in Iran, Zanzan hospitals investigated that there were not significantly difference between gender and attitude toward care of elder patient [24]. 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 [23]. 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 Zanzan hospitals investigated that there were not significantly different in subgroups of marital status and attitude toward care of elder patient [24], Similarly, a systematic review conducted in Saud Arabia concluded that nurse's marital status was not associated with their attitudes [11]. 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.

Beside 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 [11].

The 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 done on the Nurses' attitudes toward older Patients in Acute Care in Israel revealed that there was positive correlation between attitude and current level of nursing education ($p<0.05$) [20]. In addition, Study in United States found that the continuous education program promote positive attitudes toward older people care [26]. 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 [25]. The possible reason is geriatric care course might not 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 [20].

The result of this study is also in similar with the study in Israel which Showed Significant positive correlation ($p<0.05$) between year of experience and attitude toward care of elder patient [16]. 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 [23]. 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 [20]. Similarly, study conducted in Ireland reported no significant association between a person's length of experience and attitudes toward care of elder patient [25]. 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 [21]. 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. Another research conducted in Taiwan investigated that the negative attitude towards older patients was caused by lack of geriatric knowledge [26]. This is because 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 [27]. 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.

Limitations of the study

The study carried out in a poor income or resource country hence the major thrust of its limitations.

Conclusion and Recommendations

This study reveal 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, similarly significant number of nurses had negative attitude towards care of elder patient. Therefore, conduct special trainings for nurses to enhance their knowledge and attitude on the care of elder patient. In addition to this develop and implement geriatric care training formal curriculum, higher level of administrators including Federal ministry of health should develop and implement standard guideline in order to improve the nursing care of elder patients.

Computing Interest and Funding

Funding for this study was made possible through grants offered by Addis Ababa University postgraduate office. The authors declare that there is no competing interest.

Acknowledgment

Firstly, we would like to say thanks to AAU, College of health Science, School of Nursing and midwifery, Department of Nursing and Metu University for providing fund to conduct this thesis.

Finally, our deepest gratitude goes to study participants, data collectors, supervisors for their commitment and unreserved efforts made during data collection period.

Ethics approval and consent to participants

The ethical clearance was obtained from Addis Ababa University Institution Research Board. Letter submitted to Addis Ababa health bureau, Tikur Anbesa specialized Hospital and St Paul's Millennium Medical College Hospital, Ras Desta Dametew Hospital, Yekatit 12 Hospital and Menellik II hospital permission obtained from the aforementioned Health care administrators. Prior to interview all participants recruited to the study were receive written informed consent about the study. Respondents insured about the confidentiality of information obtained.

Authors' contributions

Sanbato Tamiru conceived the study and developed the study design, analysis, report writing and drafted the manuscript. Zeleke Argaw, Yohannes Ayalew and Teshome Habte were involved in reviewing the study design, analysis and manuscript writing based on appropriate guideline developed by the publisher organization. All authors read and approved the final manuscript.

References

- [1] YaseminKavlak, SeldaYıldız, and Ozgur Akin Tug, Nurses' Attitudes towards Older People: Report from a Single Institution Study, 2015
- [2]. An aging world, Wan He, Daniel Goodkind, and Paul Kowal, March 2016 P95/16)
- [3]. Population facts, Sub-Saharan Africa's growing population of older persons, April, 2016

- [4]. Efiang m, campus e. knowledge, attitude and practice of care of the elderly patients among health workers in university of calabar teaching hospital calabar, cross river state, Nigeria, 2017
- [5]. Liu, Yun-E., Ian J. Norman, and Alison E. While. "Nurses" attitudes towards older people: A systematic review." *International Journal of Nursing Studies* 50.9 (2013): 1271-1282
- [6]. Heise B, Johnsen V, Himes D, & Wing D (2012) Developing positive attitudes toward geriatric nursing among Millennials and Generation Xers. *Nursing Education Perspectives* 33(3), 156-61. DOI: 10.5480/1536-5026-33.3.156
- [7]. Baumbusch J, Leblanc M, Shaw M, & Kjørven M (2016) Factors influencing nurses' readiness to care for hospitalized older people. *International Journal of Older People Nursing* 11(2), 149-59. DOI: 10.1111/opn.12109
- [8]. World population ageing, United nation report, Newyork, 2015
- [9]. Dikken, Jeroen. How to measure nurses' knowledge and attitude regarding older patients? Diss. Utrecht University, 2017
- [10]. Eymard AS, & Douglas DH (2012) Ageism among health care providers and interventions to improve their attitudes toward older adults. *Journal of Gerontological Nursing* 38(5), 26-35. doi: 10.3928/00989134-20120307-09
- [11]. Alamri, Badrya H., and Lily D. Xiao. "Health professionals' knowledge and attitudes toward older people in primary care in Saudi Arabia." *Saudi medical journal* 38.3 (2017): 229
- [12]. Afarigan B, Abedi HA. Investigating the relationship between ageism and some demographic aspects in offering nursing care to elder patients of Al-zahra hospital, Isfahan. *International Journal of Medical*, 2016
- [13]. Küçükgüçlü Ö, Mert H, Akpınar B. Reliability and validity of Turkish version of attitudes toward old people scale. *J Clin Nurs*. 2011; 20:3196-3203
- [14]. Ethiopia CSA. population projection of Ethiopia for all regions at woreda level from 2014- 2017, PDF 2017
- [15]. .Kabatová O, Puteková S, Martinková J, Záhorecová H. Nurses' attitudes and knowledge of the geriatric age issue. *Kontakt*. 2016 Dec 1;18(4):e213-8.
- [16]. Maxim Topaz RN, M. A., and L. L. B. Israel IssiDoron. "Nurses' attitudes toward older patients in acute care in Israel." *Online journal of issues in nursing* 18.1 (2013): 61
- [17]. Tavares, João Paulo, et al. "Portuguese nurses' knowledge of and attitudes toward hospitalized older adults." *Scandinavian journal of caring sciences* 29.1 (2015): 51-61
- [18]. Tacchini-Jacquier, N., and D. Morin. "Perception of practical skill and geriatric care knowledge among nurses working in a Swiss emergency department." *Recherche en soins infirmiers* 124 (2016): 97-107
- [19]. Kwon Y, Lee HY, Hwang SS. A study on the knowledge, attitude and nursing practice of the nurses-towards the elderly in geriatric hospitals. *Journal of the Korea Academia-Industrial cooperation Society*. 2013;14(11):5785-91.
- [20]. Eloranta S, Arve S, Isoaho H, Aro I, Kalam-Salminen L, Routasalod P. Finnish nurses' perceptions of care of older patients. *International journal of nursing practice*. 2014 Apr 1;20(2):204-11.)
- [21]. Adibelli, Derya, and Dilek Kılıç. "Difficulties experienced by nurses in older patient care and their attitude of ages toward the older patients." *Nurse education today* 33.9 (2013): 1074-1078
- [22]. Oyetunde, Modupe O., Olufisayo O. Ojo, and Lucia Y. Ojewale. "Nurses' attitude towards the care of the elderly: Implications for gerontological nursing training." *Journal of Nursing Education and Practice* 3.7 (2013): 150
- [23]. Arani MM, Aazami S, Azami M, Borji M. Assessing attitudes toward elderly among nurses working in the city of Ilam. *International Journal of Nursing Sciences*. 2017 Jul 10;4(3):311-3.
- [24]. Artishedar A, Agha Jamaat M, Ghahremani Z. Attitudes toward Elderly among Nurses working in Medical-Surgical Wards in Zanjan hospitals, 2012. *Preventive Care in Nursing & Midwifery Journal*. 2015 Mar 15;4(2):81-90,
- [25]. Doherty M, Mitchell EA, O'Neill S. Attitudes of healthcare workers towards older people in a rural population: A survey using the Kogan Scale. *Nursing Research and Practice*. 2011 Apr 14;2011
- [26]. Chen S, Walsh SM. Effect of a creative-bonding intervention on Taiwanese nursing students' self-transcendence and attitudes toward elders. *Res Nurs Health*. 2009; 32:20
- [27]. Tavares JP, Silva AL, Sá-Couto P, Boltz M, Capezuti E. Nurse perception of care of hospitalized older adults a comparative study between northern and central regions of Portugal. *Rev. Latino-Am. Enfermagem*. 2017;25:e 2757)

IJSER