Knowledge and Performance of Emergency Nurses about Dog Bites Care at Emergency Unit

Nora Mostafa Siddik[1], Muhammad Hossam Eldin Hassan Muhammad Magharby[2] &Naglaa Ahmed Ahmed[3]
[1.] Nursing specialist in Assuit General Hospital
[2.] Professor of Internal Medicine and Critical care Faculty of Medicine, Assiut University, Egypt.
[3.] Assistant Professor of Critical Care & Emergency Nursing Department, Faculty of Nursing, Assiut University, Egypt

Abstract
Background: Emergency nurses play a critical role in providing proper nursing care services for dog bites, Rabies affects all mammals (bats, monkeys, wolves, jackals, cats, and foxes) **Aim of the study**: To assess knowledge and performance of emergency nurses about dog bites care at emergency unit. **Research design:** A descriptive exploratory research design was used in the conduction for this study. **Setting:** This study conducted in emergency departments at General Assuit Hospital (Shamla Hospital- Assuit) **Sample:** A convenient sample who were 60 nurses at emergency departments at Assuit General Hospital. **Tools:** This study included two tools: **Tool (I):** Nurses Knowledge assessment tool. **Tool (II):** Dog bites checklist emergency nurse's performance tool. **Results:** study results revealed that the most of total score knowledge about of dog bite have good level total knowledge score (45.0%) and unsatisfactory level practice about dog bite tool (60.0%), P. Value reflects that there is no correlation between the socio-demographic data and the level of knowledge, P. Value reflects that there is correlation between the socio-demographic data and nurse's performance and relationship between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance that negative correlation. **Conclusion:** knowledge about dog bites care have good level total knowledge and unsatisfactory level total practice about dog bites care. **Recommendation:** Regarding nursing knowledge continuing educational programs about dog bites care and should be regularly done and updated in view of changing knowledge.

Keywords: Dog bites, Emergency Unit, Emergency Nurses, Knowledge & Performance.

Introduction

Rabies transmission in animals and humans occurs mainly by close contact with saliva from infected animals by bites, scratches, and licks on torn or broken skin and mucosa, saliva of dogs which is the major medium of rabies infection have been documented to contain high concentration of rabies virus, rabies affects all mammals (bats, monkeys, wolves, jackals, cats, and foxes) annual human deaths caused by rabies (**Ameh et al., 2019**).

Rabies immunization consists of an active immune response with a vaccine and a passive immune response, active immunization i.e. inj. of anti-rabies vaccine(ARV) Vaccination route of inoculation Intramuscular regimen insert needle by 90 degree .The recommended site for IM administration is the deltoid area of the arm for adult sand for children under 5 years old Anterior aspect of the Thigh Muscle , not recommended in gluteal region, since there is chance of low absorption due to presence of fatty tissue, Post exposure vaccination schedule (**Adesina et al., 2020**).

Dose 0.1 ml Site Upper arm over each deltoid/ antero- lateral aspect of thigh muscle. Schedule (zero, thired, seven ,fourteenth and twenty-eighth) days ,One dose (0.5ml or 1ml) each into deltoid , human rabies general Considerations in rabies PEP (Post-Exposure Prophylaxis), administration of Anti-Rabies Vaccine stimulates production of neutralizing antibodies by the patient`s immune system, Protective levels of antibodies (**Acharya et al., 2021**).

Passive immunization (immunoglobulin/anti-sera): immunoglobulin (HRIG): 20 IU/kg body wieght, maximum 1500 IU, Locally infiltrate anti-rabies immunoglobulin on zero day as described under Passive Immunization, administered only once, as soon as possible after the initiation of PEP If rabies immunoglobulin (RIG) is not available on first visit, its use can be delayed by a maximum of seven days from the date of first dose of vaccine, seventh day (after third doses of ARV have been administered) (**Avner et al., 2020**).

Role of nurses about dog bites care at emergency unit, for Wound management, Wash the wound immediately (as early as possible) under running tap water for at least 15 minutes, Use soap or detergent to wash the wound (if soap is not available then use water only to wash the wound),after thorough washing and drying the wound apply disinfectant – e.g. iodine, etc, don't apply irritants viz., soil, turmeric, lime, salt, plant juice etc, don't touch the wound with bare hands (**Avner et al., 2020**).

Complications injuries include nerve injury, in addition to osteomyelitis, septic arthritis, tenosynovitis, and tendinitis. However, these complications are seen less commonly than with clenched-fist injuries, cellulitis, tenosynovitis, tendinitis, orbital cellulitis, or brain abscesses can occur, and meningitis, fatal complications, nerve damage, pain, wound becomes more tender, painful, swollen or inflamed over the next few days, Sometimes bacteria can get into your blood stream through a wound and cause a serious infection in the body **(Alam et al., 2020).**

Significance of the study:
Millions of individuals globally are affected by dog bite, United States estimates annual deaths as a result of the rabies of 60,000 people, most of them in developing countries, although all age groups are exposed rabies diseases. However, children from 5 to 14 years old are most exposed to it, and most rabies diseases are recorded in regions rural **(Callaham et al., 2023).**

Annual statistics in Egypt during the past five years indicate that the annual average number of human cases of rabies is about 28 cases and that the annual average number of human cases that have been bitten or scratched has reached approximately 600,000 cases, noting that 90% of rabies cases and 75% of cases of biting occur as a result of being bitten or bitten by dogs, which are often stray dogs. Most cases occur in children 15 year, and the disease is more prevalent in rural areas than urban areas by a ratio of 1:2 (**Rana et al., 2023**).

Aim of the study:
To assess knowledge and performance of emergency nurses about dog bites care at emergency unit.

Research questions:
1. What is level of knowledge among critical care nurses in emergency unit toward the dog bites?
2. What is level of practices among critical care nurses in emergency unit toward the dog bites nursing care?
3. Is there a relation between nurse's knowledge and practice?

Research design:
A descriptive exploratory research design was conducted for this study.

Research Setting:
This study conducted in emergency departments at General Assuit Hospital (Shamla Hospital- Assuit)

Sample:
A convenient sample who were60 nurses in emergency departments at General Assuit Hospital.

Inclusion criteria:
- Nurses who provide direct or indirect patient care at emergency departments.

- Nurses who have at least one year of experience in emergency departments

Exclusion criteria:
- Newly Graduated nurses who have less than one year of experience in emergency departments

Tools of the study:
Two tools were developed by the researcher after reviewing of the related literatures (**Fenelon et al.,2019)** within this study for data collection:

Tool one: Nurses Knowledge assessment tool:
This tool consists of a multiple-choice questions. This tool was developed by the researcher after reviewing the related literature. to assess the knowledge level of emergency nurses regarding dog bite (**Fenelon et al.,2019)**.

Part (I): Emergency nurse's sociodemographic data: this will include nurses code, gender, age, years of experiences, and level of education.

Part (II): Emergency Nurse's knowledge of dog bite:
The questionnaire consisted of 23 multiple choice questions as (definition of dog bit, causative agent of rabies, incubation period of rabies , vector of rabies , main symptoms of rabies in human, anti-rabies vaccination schedule, , antibiotic prophylaxis considered in rabies management, dog bite cane be take passively immunized by anti-rabies serum, dog bite wound should be sutured, type of vaccine do you use for a dog bite, route of administration rabies vaccine, site administration of vaccine , Manifestations ,Complications , Role of nursing Wound management)

Scoring system:
Each correct answer was given score (1) and the wrong answer was given zero. The total score of the questionnaire was 23 marks. The total score was classified as "poor" for total score <60%, "good" for total score <75%, and "very good" for score>75%.

Tool two: Dog bites checklist for emergency nurse's performance tool.
This tool was develop by the researcher after reviewed the related literature that included performance checklist for nurse's performance assessment. The observation checklist was developed to assess the practical aspect of the basic nurse's procedure about the follow (**Garvey et al., 2020**).

- (Wound Care), that included (15) steps
- Route of administration rabies vaccine (7) steps
- site administration of vaccine (7) steps

Scoring system
- Each correctly done step had score (1), but zero score was given to the incorrect or not done step. The total score of performance was (29steps)
- The total score was considered "satisfactory" if it equals or more than (70%) and "unsatisfactory" if it less than (70%). A scoring system will be

provided within the study to help the interpretation of study results.

Methods:

Date collection:

Preparatory phase:

- Official permission was obtained to carry out the proposed study, enabling the researcher to initiate data collection.
- Tools for collecting data were developed based on reviewing the current, past, local, and international related literature in various aspects using books, articles, journals, magazines, and references.

Pilot study: The pilot study included 10% of the studied sample (6Nurses) which used to determine the tools' applicability and clarity as well to estimate time needed to fill in the data collection tools. The data from the pilot study was analyzed; no changes were made to the tools utilized, so the sample selected for the pilot study was involved in the study

Validity and Reliability: Face validity was done by five specialists who evaluated the tools for clarity, relevance, comprehensiveness, and understanding. It included three professors and one assistant professors from the department of critical care nursing team. Minor modifications were made and the tools were then designed in their final version.

Reliability of the tools

Reliability of the tool 1 was: Cronbach's Alpha = 0.732

Reliability of the tool 2 was: Cronbach's Alpha = 0.567

Ethical considerations:

Research proposal was approved from Ethical Committee in the Faculty of Nursing, Assiut University on (2023/11/27), with ID approval (1120240503). There was no risk for study subject during application of the study. Confidentiality and privacy of the studied patients were asserted by the investigator. Explanation of the aim and nature of the study was done to studied patients and the right to refuse participation in the study was emphasized to the patients. Verbal consent was obtained from patients who were participated in the study.

Implementation:

Phase (I): Nurses knowledge questionnaire translate into Arabic languages to be filled with the participants nurses, that contain questions related to the study aim, consist of multiple-choice questions to facilitate participant's responses

Phase (II): Structured interviews with the participants (4-6 participants) within each meeting to clarify participants responses to the research study question and facilitate a better understanding of their choices. The researcher was taking notes during the interview to be included in the data analysis. An audio recording was used during the interview after taking approval from the participants to help the researcher better investigation of collected data. The focus group interview (4-6 nurses) was conducted with critical care nurses working in ER departments. The interview was designed by the researcher based on the literature review to assess the nurse's knowledge of the dog bite this tool was divided into two parts.

Phase (III): What's app group was created by the researcher that includes all participants for contact with the study participants and to achieve communication between them and the researcher.

Statistical Analysis:

The researcher entered the data by using a personal computer. All data were entered into statistical packages for the social sciences (SPSS) version 25.0 software for analysis. The researcher coded, analyzed, categorized, and then analyze the content of each tool. Categorical variables were described by number and percent, whereas continuous variables were described by the mean and standard deviation (Mean, SD). Chi-square test was used to compare between categorical variables, where compare between continuous variables by t-test. (P value < 0.05) was considered statistically significant.

Results

Table (1): Frequency distribution of Social demographic data for Study Sample (N=60)

Variables	No	%
Gender		
Female	26	43.3
Male	34	56.7
Age group		
Less than 25 year	19	31.7
From 25-30 year	32	53.3
More than 30 year	9	15.0
Mean±SD(range)	28.48±6.20(22-50)	
Experience		
<3years	25	41.7
>3 years	35	58.3
Education Level		
Nursing Diploma	9	15.0
Nursing Technical Institute	22	36.7
Bachelor of Nursing	29	48.3

Table (2): Distribution of nurses knowledge assessment questionnaire for study sample (N=60)

Questions	Incorrect		Correct	
	No	%	No	%
Which of the following is the causative agent of rabies	6	10.0	54	90.0
Which of the following is the incubation period of rabies virus	33	55.0	27	45.0
Which of the following is the vector of rabies	12	20.0	48	80.0
Which of the following are main symptoms of rabies in human	17	28.3	43	71.7
Which of the following vaccines are used for rabies	35	58.3	25	41.7
Which of the following anti-rabies vaccination schedule is correct	11	18.3	49	81.7
Is there any vaccine for pre-exposure prophylaxis for rabies	33	55.0	27	45.0
Should a dog bite wound initially be irrigated	19	31.7	41	68.3
How long does it take to wash a dog bite wound	18	30.0	42	70.0
How should the dog bite wound initially be cleaned	18	30.0	42	70.0
In absence of soap, how a dog bite wound should be cleaned	8	13.3	52	86.7
Are pregnancy and infancy contraindicated for rabies post-exposure	28	46.7	32	53.3
Is untreated rabies infection always fatal	42	70.0	18	30.0
Do you think antibiotic prophylaxis can be considered in rabies management	34	56.7	26	43.3
Do you think a patient of a deep wound a dog bite can be take passively immunized by anti-rabies serum	10	16.7	50	83.3
Do you think dog bite wound should be sutured	24	40.0	36	60.0
Should a dog bite patient be vaccinated after initial treatment	14	23.3	46	76.7
Do you think a combination of antibiotic and anti-tetanus should be given to a dog bite patient	35	58.3	25	41.7
By which route of administration do you give rabies vaccine for Adult	13	21.7	47	78.3
By which site do you administrate cell culture rabies vaccine for children under 5 years old	16	26.7	44	73.3
If rabies immu2globulin (RIG) its use can be delayed by a maximum of 7 days from the date of first dose of vaccine	12	20.0	48	80.0
IS HRIG into and around wound	52	86.7	8	13.3
IS Avoid HRIG administration into the buttock area	18	30.0	42	70.0

Table (3): Distribution of Emergency Nurse's knowledge score of dog bite For Study Sample (N=60)

Level of knowledge	Max Score	NO	%
Poor	<60%	22	36.7
Good	60-75%	27	45.0
Very good	>75%	11	18.3
Mean±SD(range)	23	14.53± 3.14(8-20)	
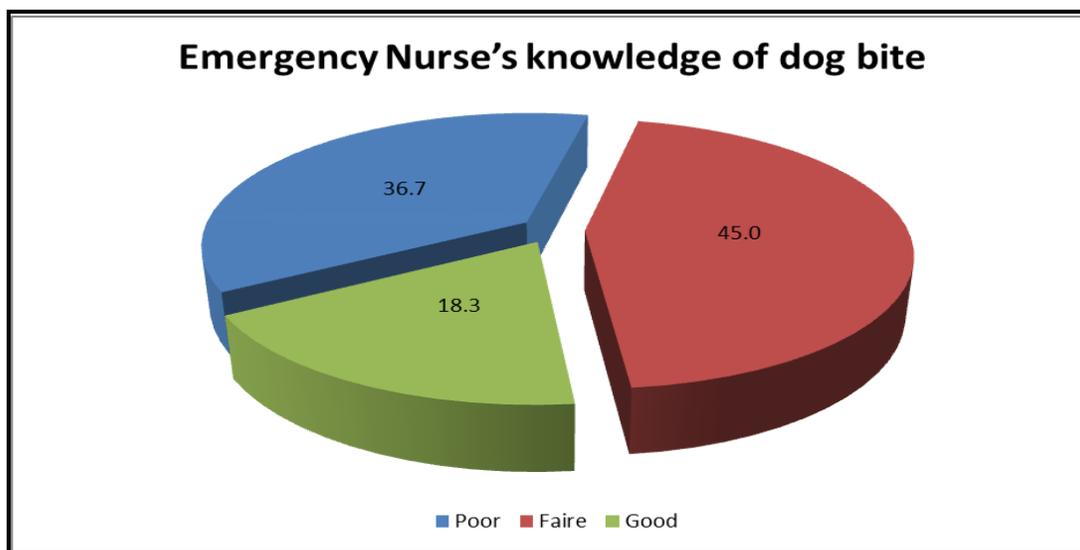
**Figure (1): Percentage of Total knowledge Score of Critical care nurses about dog bite. (No=60)**

Table (4): Correlation between Emergency Nurse's knowledge of dog bite with Their Sociodemographic data For Study Sample (N=60)

	Nurse's knowledge of dog bite						X2	P. value
	Poor (n=22)		Good (n=27)		Very good (n=11)			
	No	%	No	%	No	%		
Gender								
Female	7	31.8	13	48.1	6	54.5	**2.01**	**0.367**
Male	15	68.2	14	51.9	5	45.5		
Age group								
Less than 25 year	5	22.7	11	40.7	3	27.3		
From 25-30 year	13	59.1	13	48.1	6	54.5	**2.10**	**0.718**
More than 30 year	4	18.2	3	11.1	2	18.2		
Experience								
<3years	12	54.5	9	33.3	4	36.4	**2.40**	**0.301**
>3 years	10	45.5	18	66.7	7	63.6		
Education Level								
Nursing Diploma	2	9.1	5	18.5	2	18.2		
Nursing Technical Institute	7	31.8	11	40.7	4	36.4	**1.94**	**0.747**
Bachelor of Nursing	13	59.1	11	40.7	5	45.5		

Chi square test for qualitative data between the two groups

Table (5): Frequency distribution of nurse's procedure checklist emergency nurse's performance score For Study Sample (N=60)

	Max Score	Mean±SD	Range	Mean%
-Wound Care	30	20.08±3.71	11-27	66.93
- Route of administration rabies vaccine	14	11.03±1.64	7-14	78.79
- Site administration of vaccine	14	10.65±1.93	6-14	76.07
Dog bites checklist emergency nurse's performance	58	41.77±5.76	27-54	72.02

Table (6): Frequency distribution of score of emergency nurse's performance level about dog bite For Study Sample (N=60)

Dog bites checklist emergency nurse's performance	Max Score	No	%
Unsatisfactory	<75%	36	60.0
Satisfactory	≥75%	24	40.0
Mean±SD(range)	58	41.77±5.76(27-54)	
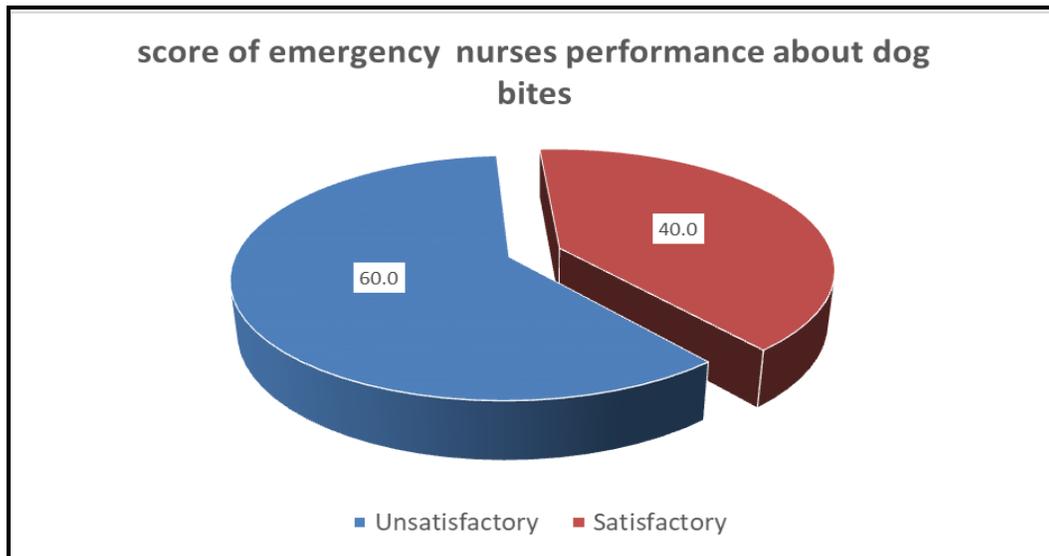
Figure (2): Frequency distribution of score of emergency nurse's performance about dog bite For Study Sample (N=60)

Table (7): Relation Between Dog bites emergency nurse's performance with Their Socio demographic data For Study Sample (N=60)

	Dog bites checklist emergency nurse's performance					
	Unsatisfactory (N=36)		Satisfactory (N=24)		X2	P.value
	No	%	No	%		
Gender						
Female	16	44.4	10	41.7	0.05	0.832
Male	20	55.6	14	58.3		
Age group						
Less than 25 year	11	30.6	8	33.3	0.19	0.908
From 25-30 year	20	55.6	12	50.0		
More than 30 year	5	13.9	4	16.7		
Experience						
<3years	19	52.8	6	25.0	4.57	0.033*
>3 years	17	47.2	18	75.0		
Education Level						
Nursing Diploma	3	8.3	6	25.0	4.18	0.124
Nursing Technical Institute	16	44.4	6	25.0		
Bachelor of Nursing	17	47.2	12	50.0		

Chi square test for qualitative data between the two groups
Fisherexact test used to compare between categorical variables(2ˣ2)
*Significant level at P value < 0.05
**Significant level at P value < 0.05

Table (8): Comparison Between Emergency Nurse's knowledge of dog bite and Dog bites checklist emergency nurse's performance with Their Socio demographic data For Study Sample (N=60)

	No	Emergency Nurse's knowledge of dog bite		Test Used	Dog bites checklist emergency nurse's performance		Test Used
		Mean±SD	Range		Mean±SD	Range	
Gender							
Female	26	15±3.14	8-20	T=1.02	41.23±6.64	27-54	**T=0.39**
Male	34	14.18±3.14	8-19	P=0.318	42.18±5.05	28-51	**P=0.533**
Age group							
Less than 25 year	19	14.95±2.97	10-20	F= 0.35	40.47±6.21	27-54	**F=0.69**
From 25-30 year	32	14.47±3.05	8-19	P=0.703	42.34±5.44	28-52	**P=0.504**
More than 30 year	9	13.89±3.98	8-18		42.44±6.13	31-49	
Experience							
<3years	25	14.12±2.98	8-19	T=0.74	40.92±5.74	27-54	**T=0.92**
>3 years	35	14.83±3.26	8-20	P=0.393	42.37±5.78	28-52	**P=0.340**
Education Level							
Nursing Diploma	9	15±3.35	8-18	F=0.31	43.22±6.26	31-49	**F=0.57**
Nursing Technical Institute	22	14.77±3.13	8-19	P=0.732	40.86±5.84	27-54	**P=0.567**
Bachelor of Nursing	29	14.21±3.16	8-20		42±5.64	28-52	

Independent T-test quantitative data between the two groups
- One-way Anovatest quantitative data between the Three groups or more
*Significant level at P value < 0.05, **Significant level at P value < 0.05
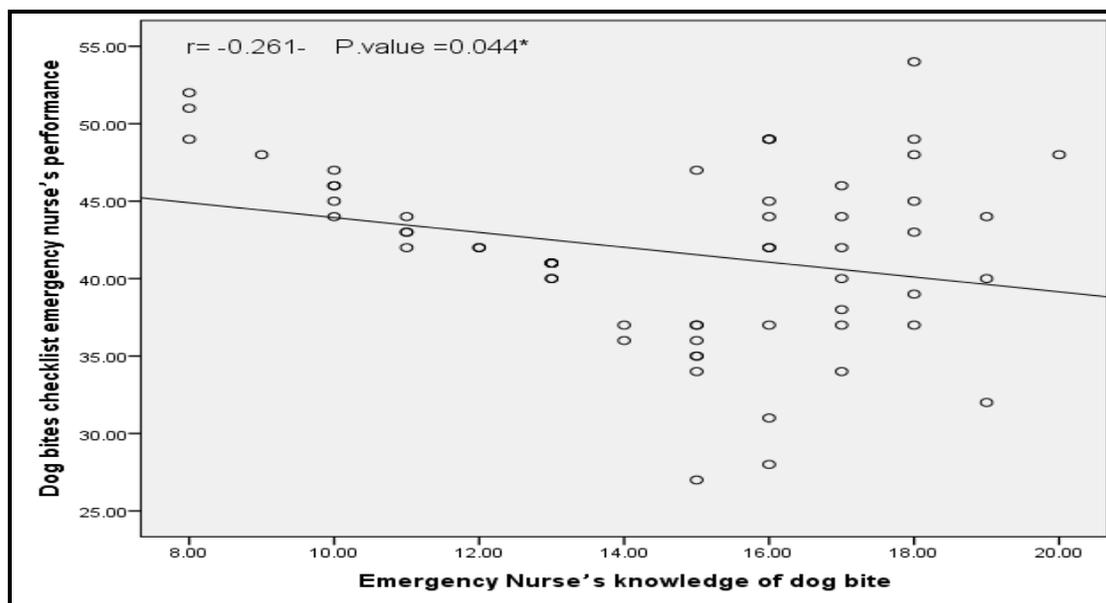

Figure (3): Scatterplot illustrating a Negative correlation: hypothetical data for the relationship between Emergency Nurse's knowledge of dog bite and Dog bites checklist emergency nurse's performance

Table (1): Illustrates the demographic data of the assigned nurse's for the study. Regarding gender, (56.7%) of the studied were male, and (43.3%) were female. Regarding experience, the majority of studied (58.3%) were >3 years. Regarding education Level, the minor of nurse's qualifications were nursing diploma with percentage of (15%).

Table (2): Shows regarding distribution of nurses knowledge assessment, more than three- quarters of the studied nurses (90%) causative agent of rabies is Virus. The majority of the studied nurses (86%) In absence of soap, a dog bite wound should be cleaned With plenty of Tap water. The minor of the studied nurses (13%) immunoglobulin into and around the wound.

Table (3): Illustrates the total knowledge score of critical care nurses. It is clear thatthe majority (45.0%) have good level knowledge, (18.3%) have very good level of knowledge.

Figure (1): Illustrates the total knowledge of critical care nurses regarding the knowledge score level of dog bite. It is clear that (45.0%) have good level knowledge, (18.3%) have very good level of knowledge.

Table (4): This table illustrates that the correlation between the sociodemographic data and the level of Knowledge. It is clear that P. Value for all of the sociodemographic data was (Not significant), which reflects that there is no correlation between the sociodemographic data and the level of knowledge.

Table (5): This table shows the mean and standard deviation of practical score of correct done procedure care for wound Care the mean was (20.08) and std. deviation was (3.71).

Table (6): Illustrates of score of emergency nurse's performance level about dog bite regarding the performance score of dog bite. It is clear that the majority (60.0%) of the nurses have Unsatisfactory, (40.0%) have Satisfactory.

Table (7): The table illustrates that the correlation between the sociodemographic data and nurse's performance. It is clear that P. Value for all of the sociodemographic data was (significant), which reflects that there is correlation between the sociodemographic data and nurse's performance.

Table (8): Shows the comparison between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance with Their socio demographic data**,** Shows correlation between the sociodemographic data and nurse's performance. It is clear that P. Value for all of the sociodemographic data was (significant), which reflects that there is correlation between the sociodemographic data and nurse's performance.

Figure (3): Shows relationship between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance that negative correlation.

Discussion:
Dog bites care is the biggest problem of modern health services, and it is an indicator of the quality of the care provided in hospitals. The present study aimed to assessment the knowledge and performance of emergency nurses about dog bites care at emergency unit. Socio-demographic of the nurse's study finding of the current study revealed of socio-demographic of the nurse's sample.

The current study verified that the highest percentage among studied nurses their age group ranged from twenty five to thirty years old. This observation is affirmed by the study done by **Bhartiok et al., (2019)** who found that, more than half of the studied nurses their ages falling between twenty five to thirty years old. In my opinion the age group ranged from twenty five to thirty years old, to tolerate hard work of emergency unit and this to help to improve nurses out come.

The current study revealed that more than half of studied sample were males. This observation is supported by the finding in a study carried out by **Bouaddiet al., (2020)** who found that, more than half of the studied patients were males. In terms of the participants' educational level, the current study indicates that the majority had finished bachelor's degree. This finding aligns with a study conducted by **Garvey et al., (2020)** where a high percentage of participants also had a bachelor's degree education.

Regarding Experience, the results of the current study indicate that almost half of the studied nurses were more than three years' experience. This finding is consistent with the study conducted by **Siddiqui et al., (2021)** who found that, the half of the studied nurses were more than three years' experience. **Regarding knowledge of dog bites,** the current study found that the more than three- quarters of the studied nurse's causative agent of rabies is Virus, were correct answer, this finding agreement with **Benson et al., (2019)** who reported that the causative agent of rabies is Virus. The causative agent of rabies varies depending on several factors, including the specific severity of dog bites.

Regarding knowledge of dog bites**,** the current study found thatthe majority of the studied nurses, in absence of soap, a dog bite wound should be cleaned with plenty of tap water. This finding agreement with **Dodet, et al., (2021)** who reported that the majority in absence of soap, a dog bite wound should be cleaned with plenty of tap water.

Regarding knowledge of dog bites, the current study found that the minor of the studied nurses, given immunoglobulin into and around the wound. This finding agreement with **Ertl, et al., (2020)** who reported that the given immunoglobulin into and around the wound. In my opinion the given immunoglobulin around the wound. Regarding knowledge of dog bites, the current study found that the majority of the studied nurses, main symptoms of rabies in human that fever or hydrophobia. This finding agreement with **Adedeji,et al., (2020)** who reported that the majority main symptoms of rabies in human that fever or hydrophobia. In my opinion the main symptoms of rabies in human that fever and hydrophobia.

Regarding knowledge of dog bites**,** the current study found thatthe majority of the studied nurses, time it takes to wash a dog bite wound that five minutes or

fifteen minutes. This finding agreement with **Avner, et al., (2020)** who reported that the majority time it takes to wash a dog bite wound that five minutes or fifteen minutes. In my opinion the it takes to wash a dog bite wound that fifteen minute.

Regarding knowledge of dog bites, , the current study found that the majority of the studied nurses, the vector of rabies that all mammals. This finding disagreement with **Davlin, et al., (2021)** who reported that the majority vector of rabies that dog or cat. In my opinion the vector of rabies that all mammals. Regarding the total score knowledge level about dog bite. The current study observed that the high good level total knowledge score. This result agreement with (**Dabuma et al., 2020**) who reported that the high good level total knowledge score. The current study observed that the minor very good level knowledge score. This result agreement with (**Dire et al., 2021**) who reported that the minor very good level knowledge score.

Regarding correlations between the socio-demographic data and the level of knowledge, the correlation between socio-demographic data and the level of knowledge the current study shows that no significant correlation between socio-demographic data and the level of knowledge. This result agreement with (**Ehizibolo, et al., 2021**) who documented that no significant difference between socio-demographic data and the level of knowledge.

Nurses practice regarding dog bite, the current study observed that the majority of dog bite wounds are not sutured of done correct. This result agreement with (**Hwang, et al., 2020**) who documented that dog bite wounds are not sutured. Nurses practice regarding dog bite. The current study observed that more than half of nurses were wash the wound immediately under running tap water for at least fifteen minutes of done correct. This result agreement with (**Joo, et al., 2020**) who documented that more than half of nurses were wash the wound immediately under running tap water for at least fifteen minutes.

Regarding the mean and standard deviation of total practice score of procedure, the current study observed that the majority of route of administration rabies vaccine total practice score of procedure with mean was (11.03) & std. deviation was (1.64). This result agreement with (**Kaye, et al., 2020**) who documented that the majority of route of administration rabies vaccine total practice score of procedure with mean was (11.03) & std. deviation was (1.64).

Regarding the total score performance level e about dog bite. The current study observed that the majority of the nurses have unsatisfactory total practice score. This result agreement with (**Kumar 2022**) who documented that the majority of the

nurses have unsatisfactory total practice score. The current study observed that the minor of the studied nurses, have satisfactory total practice score. This result agreement with (**Mubashir, et al., 2021**) who documented that the minor of the studied nurses, have satisfactory total practice score.

Regarding correlation between total practice score and the socio-demographic data, correlation between the socio-demographic data and nurse's performance. It is clear that P. Value for all of the socio-demographic data was (significant), which reflects that there is correlation between the socio-demographic data and nurse's performance. This result agreement with (**Neamat, et al., 2020**) who documented that P. Value for all of the socio-demographic data was (significant), which reflects that there is correlation between the socio-demographic data and nurse's performance**.**

Regarding comparison between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance with Their socio demographic data**.** It is clear that P value< **0.05** for all of the socio-demographic data was (significant), which reflects that there is correlation between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance with their socio demographic data. This result agreement with (**Abraham, et al.,2019**) who documented that P. Value for all of the socio-demographic data was (significant), which reflects that there is correlation between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance with Their socio demographic data.

Relationship between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance**.** The current study shows that the relationship between emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance that significant negative correlation. This result agreement with (**Acharya, et al., 2021**) who documented that significant negative correlation emergency nurse's knowledge of dog bite and dog bites checklist emergency nurse's performance**.**

Conclusion:
Based on the result of the current study, it was observed that the majority (45.0%) have good level knowledge, (18.3%) have very good level of knowledge. The majority (60.0%) of the nurse have unsatisfactory level total practice about dog bites care, (40.0%) have Satisfactory. And reflects that there is no correlation between the socio-demographic data and the level of knowledge reflects that there is correlation between the socio-demographic data and nurse's performance.

Recommendations:

Based on the study findings, the following recommendations are suggested.

Recommendation regarding nursing practice:
- Establish national guidelines for Knowledge and practice about dog bites care in Emergency Unit.
- Also recommended that nurses participate in in-service programs to renew and update their understanding of guidelines, principles, and evidence-based practices.
- Strict observation of nursing staff during work and continuous evaluation of their practice.

Recommendation regarding nursing knowledge:
- Continuing educational programs about dog bites care and should be regularly done and updated in view of changing knowledge.

Recommendation regarding hospitals:
- The administration of nursing at the hospital have to provide Wound Care, route of administration rabies vaccine, site administration of vaccine, vaccination doses, cleaning material and sterile, personal protective equipment, uniforms specific to critical care nurses.

Recommendation regarding the research:
- Further research studies are needed to reapply this research on a larger
- probability sample acquired from different geographical areas in Assuit for generalization.

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