# Assessment of Safety Nursing Practices Provided to Patients undergoing Blood Transfusion procedure

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*Abstract*

***Background:** The blood transfusion process is a complex and high-risk procedure. the nurse is the first person who responsible for initiating, maintaining, monitoring, and discontinuing the blood transfusion, as well as protecting the patient from the potential transfusion reactions **Objective:** To assess the safety nursing practices provided to patients undergoing blood transfusion procedure. **Settings:** The study was carried out at inpatient medical and surgical units of two hospitals: Damanhour National Medical Institute - affiliated to the General Organization for teaching hospitals and Institutes and. Damanhour Oncology Center - affiliated to the Ministry of Health, Egypt. **Subjects:** a convenient sample of ninety nurse's male and female involved in providing direct care for blood transfusion patients at the above-mentioned settings. These constitute fifty inpatient nurses from Damanhour National Medical Institute and forty inpatient nurses from Damanhour Oncology. **Tools:** two tools were used for data collection. **The first tool** was Socio Demographic and Academic Profile Questionnaire Sheet to elicit the data about nurse's socio demographic and academic characteristics **second tool** was Safety Nursing Practices Provided to Patients undergoing Blood Transfusion procedure: observational checklist to observe the extent of safety in nursing practices provided to patients undergoing blood transfusion procedure. **Results:** Findings of the present study revealed that the highest portion of studied nurses (90.0%) had unsatisfactory nursing practices in relation to assessment of safety practices Provided to Patients undergoing Blood Transfusion procedure with mean ± SD equal 7.98 ± 4.99.There are a positive statistical significant relationship between the safe nurses practices and their level of education, years of experience and attendance of training programs were represent($\chi^2= 19.301^*$ $^{MC}p= <0.001^*$, $\chi^2= 50.00^*$ FEp= $<0.001^*$ ) respectively. while no statistically significant difference was detected between safe nurses' practices and their gender, age, years of experience and frequency of performing blood transfusion **Conclusion:** The study concluded that this study illustrated that majority of nurses had unsatisfactory level of overall practice regarding safe blood administration. Moreover, this study concluded that the majority of nurses had unsatisfactory practices regarding health care environmental safety, safe blood transfusion procedure.*

**Keywords:** Safety nursing practice, Blood transfusion procedure.

## Introduction

Blood transfusion is a highly effective and potentially life-saving procedure that is a cornerstone in managing many illness. From the early 19th century to date millions of patients have been candidates to receive blood components annually . (Bediako et al.,

2021) .In 2020,the United Kingdom's (UK) National confidential hemovigilance system annual report , decided that 2.1 million blood components are issued ., This also occurred throughout the pandemic, particularly during the second wave;30 % of COVID-19 hospitalized patients required blood transfusions (Barriteau,. etal.2020)

Unsafe practice may results in avoidable complications that threaten patients' safety, according to annual regular SHOT reporting in 2020, the most frequent cause of transfusion incidents is still errors.These are frequently several. Typically, as a result of fundamental positive patient identification (PPI) errors, particularly at bedside checks that count (52.4%). from the overall number of errors.(BoltonMaggs etal., 2014).(Bolton-Maggs, 2018; (Narayan& Poles, 2019)

Consequently, SHOT suggested that nursing staff should be meticulous in checking the component's identification details against those of the patient. Every hospital should have a safeguard policy for formally confirming the patient's identity against the blood component label at the bedside. Nurse observations during transfusion also show wide variations, commencing with assessing the patient's general condition and recording vital signs (temperature, pulse, respiration, and blood pressure) before and during the transfusion process, and evolving to direct observation of the patient within the first 15 minutes of starting the transfusion or 50 ml of blood infusion. As a result, during the blood transfusion process, the nurse should remain with the patient to detect early an acute transfusion reaction as soon as possible and deal with it in a timely manner. Document the procedure in the patient's medical record, including patient assessment findings and tolerance to the procedure, and monitor the patient's reaction and effectiveness. These are critical factors in providing safer patient

care. (Sapkota et al., 2018) (Hill, B., & Derbyshire, J. (2021).

patient safety culture has become a core element in improving patient safety that focuses on minimize adverse events and eliminate preventable harm in health care system according to endorsements of World Health Organization's (WHO) World Alliance for Patient Safety and International Patient Safety Goals (IPSG) (El Shafei& Zayed 2019).

The status of patient safety culture in Arab countries still has many areas for improvement that need continuous assessment and monitoring to attain a safe environment both for patients and health-care providers especially in Egypt Moreover, Egyptian studies focused on dealing with patient safety issues from the perspective of front-line healthcare providers has received less attention . A number of complications can arise as a result of blood transfusion, some of which are of major concern due to their potential to cause hazards such as ABO incompitabitity, results from identification errors. The implementation of bedside checks allowing for corrective action to be taken to prevent permanent harm. Many adverse events could be avoided with safe nursing care. Although errors are almost unavoidable, safety can be improved (Elmontsri, etL2017) (Alharbi. ,etaL2018) many studied reviews that ulmost significant obstacle to improving patient safety is a lack of research of the magnitude of errors that occur on a daily basis in all health care settings ( Tetuan,etL2017) .( Tereanu. , etaL2018)

So, blood transfusion as alife-saving procedure can be life threatening if not carefully performed in accordance with facility policy and safe nursing practice. ( Kavaklioglu, et al., 2017).also safe nursing practice and safe environment of care, are all part of improving patient safety (Jangland et al., 2017). So, this study was conducted to assess assessment

of safety nursing practices provided to patients undergoing blood transfusion procedure.

## *Aims of the Study*

This study aims to assess the safety nursing practices provided to patients undergoing blood transfusion procedure.

## *Research Questions*

- What is the extent of safety in nursing practices provided to patients undergoing blood transfusion procedure?

## *Materials and Method*

### *Materials*

*Design:* Descriptive research design was utilized to meet the aim of the present study *Settings:* The study was carried out at inpatient medical and surgical units of two hospitals: Damanhour National Medical Institute -affiliated to the General Organization for teaching hospitals and Institutes and Damanhour Oncology Center - affiliated to the Ministry of Health

*Subjects:* The study was carried out at inpatient medical and surgical units of two hospitals: Damanhour National Medical Institute -affiliated to the General Organization for teaching hospitals and Institutes and Damanhour Oncology Center - affiliated to the Ministry of Health

*Tools:* Two tools were used to collect data of the study:

**Tool (I): Socio Demographic and Academic Profile Questionnaire Sheet:** This tool was used to elicit the data about nurses socio demographic and academic characteristics: It included seven questions from (Q1) to(Q7) related to age, gender, and level of education, years of experience in the current ward, presence of previous experience in another specialty, and attendance of any training about safe nursing practices, frequency of performing blood transfusion during the last month.

**Tool II: Safety Nursing Practices Provided to Patients undergoing Blood Transfusion procedure: observational checklist** This tool was used to assess the extent of safety in nursing practices provided to patients undergoing blood transfusion procedure. It was consisted of the following four sections:

**section I: Safety nursing practices before blood transfusion.** It included (13) steps related to: nursing safety practices that should be done before blood transfusion as checking patients risk factors for reaction, verification of physician order, positive patient identification, check the vital signs, infection control measures and personal protective equipment, preparation of blood unit, bedside double check and warming the blood pack

**section II: safety nursing practices during blood transfusion**; this section includes (7) steps related to: nursing safety practices that should be done during blood transfusion as transfusion rate, direct observation of the patient during the first 15 minutes for signs of immediate transfusion reaction transfusion, action taken If any reaction finding ,vital signs monitoring

**section III; safety nursing practices after blood transfusion**; this section includes (4) steps related to nursing safety practices that should be done after blood transfusion as: vital signs checks, safe waste disposal , hand washing and detailed documentation **Section (IV): Nurses' safety practices regarding patient's environment:** this section includes (5) steps related to nursing safety practices that should be done regarding patient's environment as checking the cleansing and disinfecting of transfusion environmental area before and after the procedure, performance in case of spilling and ensuring efficiency and functioning of supporting aids

*Method*

1-Approval from the ethical committee, Faculty of Nursing Alexandria University was obtained.

2-An official letter was obtained from the Faculty of Nursing Alexandria University to the administrative authorities in Damanhour Oncology Center and Damanhour National Medical Institute Hospital to take their permission to carry out the study after explaining its purpose.

3-An official approval was obtained from the administrative authorities in the identified setting to take permission to carry out the study after explaining its purpose.

4-Tools of the study was developed by the researcher after a thorough review of current literature

5-The developed tools were submitted to a jury of 5 experts in the field of Medical Surgical Nursing, faculty of Nursing at Alexandria University and Damanhour University, to assess its content validity. Comments and suggestion were reviewed and necessary modifications were done.

6-Reliability of the tool was identified using Cronbach's Alpha statistical test. The reliability coefficient was (0.76 %).

7-A pilot study was conducted on 10% of the study sample (9nurses) to ascertain the applicability, clarity and feasibility of the developed tools and necessary modifications were done. Those nurses were excluded from the study sample.

8-Each nurse caring for patients during blood transfusion was observed individually twice in different shifts (morning and afternoon) for each step of practice by Concealed observation performance in order to achieve objectivity in data collection.

9-Data were collected throughout a period of 3 months from fifth of September to (13) of November 2021 by the researcher. The first observation for nurse's practice was done at morning shift while performing blood transfusion procedure and the second observation was done for the same nurse after a week from the first observation according to his/her afternoon shift on time schedule in the same setting.

10- Data were collected and analyzed to assess safe nursing practices Provided to Patients undergoing blood transfusion procedure

**Ethical considerations:**

- Witness informed written consent was obtained from head nurses after explanation of the aim of the study.

- The nurses was informed that his or her participation in the study is voluntary and he / she can withdraw at any time.

- Privacy of the study participants was asserted.

- Data confidentiality was assured.

*Statistical Analysis*

- The collected data were coded and entered in special format to be suitable for computer feeding.

- Following data entry, checking and verification process were carried out in order to avoid any errors.

- Data were analyzed using the statistical package for social science SPSS (Version 20).

*Results*

**Table (1)** The present study revealed that the majority (87.8%) of nurses were female and nearly half of the studied nurses (48.9%) were in the age group of $21 \leq 30$ years, diploma nursing was the most common qualification encountered among the study group(45.6% ) and more than half of them were worked in another specialty (51.1%). Also, more than three quarters of the studied nurses (83.3%) didn't attend educational courses\ training

programs related to patient safety. and more than half of the studied nurses (63.3%) performed blood transfusion less than 5 times during last month

**Table (2) Illustrate the distribution of the nurses according to their level of safe practice regarding patient safety by domains** (total n=90):

In relation to this table, it was clarified that the total scores of the studied nurses' practice (90.0%) regarding the patient safety practices were unsatisfactory with mean ± SD equal        7.98 ± 4.99

As regard nurses' safety practices before blood transfusion, the table reflects that overall percent score of the studied nurses' practice (97.8%) were unsatisfactory. Also, regarding nurses' safety practices during blood transfusion the overall percent score of the studied nurses' practice (90%) were unsatisfactory.

Concerning nurses' safety practices after blood transfusion, the results represent that overall percent score of the studied nurses' practice (90%) were unsatisfactory. Further regarding nurses' safety practices regarding patient's environment, it is representing that overall percent score of the studied nurses' practice (95.6%) were unsatisfactory.

**Table (3): ): Illustrate the relationship between nurses' practice levels and their sociodemographic data** There are a positive statistical significant relationship between the safe nurses practices and their level of education, years of experience and attendance of training programs were represent($\chi^2$= 19.301$^*$ $^{MC}$p= <0.001$^*$, $\chi2$= 50.00* FEp= <0.001* ) respectively. while no statistical significant difference were detected between safe nurses' practices and their gender , age, years of experience and frequency of performing blood transfusion

### Discussion

The majority of errors occur in clinical transfusion procedures, such as using the incorrect blood units at the bedside results from human factors that account for most reported errors in the serious hazards of blood transfusion report, thus staff training on safe blood transfusion is strongly recommended. ((Freixo et al., 2017).

Therefore, the objective of this descriptive study was to assess the extent to what the safety nursing practices provided to patients undergoing blood transfusion procedure.

The current results revealed that majority of nurses had unsatisfactory practices related to blood transfusion procedure. These practices include safety practices before ,during and after blood transfusion and safe health care environment. Nurses should be aware of these practices that help in safe blood transfusion and be able to demonstrate these practices to patients to achieve high quality practices.

In the current study, the majority of studied sample (87.8 %) was female. In relation to age, near to the half (48.9%) was ranged from 21<30 with Mean ±SD 32.24 ± 7.87. On the subject of Level of education, more than one-third (45.6%) was diploma with more than two fifth (43.3%) had experience between 5 to less than 10 years with Mean ±SD 7.52 ± 5.60. As regards presence of previous experience in another specialty; about one quarter of them (28.3%) had experience in medical words. According to, previous attendance of educational course/training programs related to patient safety, more than half of those was attended (53.3%) had educational courses.

In relation to nurses' sociodemographic characteristics; The majority of the nurses assessed were females, according to the findings of this study. This could be due to the feminization of the nursing profession is seen as a gender barrier for males to become nurses, and the public view of nursing is still that it is a female-dominated profession. This discovery was consistent with Islami Vaghar M. 2018 ;. Cutinho,

Sheilini, & Beerappa(2018;(Tan et al., 2017) ; Mohd-Nor, N., & Bit-Lian, Y. (2019).who revealed that the dominance of female nurses among most of their studied samples. Besides, this finding was not in accordance with Elsayed,& Hussein, (2019). in medical departments of Fayoum University who found that the majority of studied nurses were males..

also, less than two thirds (63.3%) of the studied nurses performed blood transfusion less than 5 times during the month before the data collection of the study, this comes in agreement with a study had been done Ghana by Bediako, Ofosu-Poku & Druye, (2021), as they confirmed that less than two thirds (63%) had performed blood transfusion at least 5 times, and more than two fifth (46%) had never received any training on blood transfusion. These results indicate that perhaps due to the small number of times this procedure was implemented, it was not included in the training plan, and perhaps because it is considered one of the routine procedures known in most medical departments. Therefore, awareness of blood safety and should be greatly increased among the medical staff (Damanhouri, 2009).

According to levels of observational checklist, the highest score of unsatisfactory practice was for nurses' safety practices before blood transfusion (97.8 %) and the lowest was for during and after transfusion (90%) with total patient safety practices Mean ± SD of 7.98 ± 4.99. Overall, a fair amount of theoretical and practical knowledge about blood transfusion practices were observed among nurses with some inconsistencies not related to qualification or work experience. This illuminates inherent lacunae in the existing training system and merits urgent redressal.

In contrary, Jogi, Mohanan & Nedungalaparambil (2021), deducted poor scores were also for key clinical practices relating to warming of blood products, posttransfusion patient monitoring, administration of pre-medications, and disposal of blood bags among the respondents, that relates to before and after the procedure. While, Hill & Derbyshire (2021) confirmed a varied nurse` practices among blood transfusion procedure from the preparation, among and after. Also, Mohammad, (2021) results in Karbala City Hospital/Iraq showed that the overall practice was poor level at low level of Mean ± SD of 1.34±0.4232.

According to nurses` scores of observational checklists the high mean percent score (25.56%) was for nurses' safety practices after blood transfusion and the lowest (8.13%) for nurses' safety practices regarding patient's environment. These results gave a hint to the importance of improving and developing educational programs for nurses about infection control practices and patients' safety measures.

The results are in disagreement with the results by Santos, Santana & Oliveira (2021) as they demonstrated that the lowest scores for nurses were during the procedure, listing that most professionals reported not being able to provide transfusion care, lacked information on proper care and monitored the patients ineffectively. Furthermore, they did not meet biosecurity standards.

According to the relationship between nurses' practices levels and their sociodemographic data there is highly significance difference between nurses' practices levels and level of education and previous attendance of educational course/training programs related to patient safety at level of significance $p \leq 0.05$. While there was no significance difference between nurses' practices levels and their gender at $p = 0.302$, their age at $p= 0.706$, their years of experience in the current ward and presence of previous experience in another specialty besides, their frequency of performing blood transfusion during the last month all at $p= 1.000$.

The recent results are in disagreement with Ali & Mohammed, (2021), in their study showed no significant difference between nurses` practice and their education at P-value=0.750, their work unit at P-value=0.930, their years of experience at P-value=0.861, training courses at P-value=0.964. While there was a significant difference between nurses` practice and their current of experience in workplace at p- value= P-value=0.005.

Additionally, SACHIT, RASHASH & KAMEL, (2020) in their study results confirmed non-significant difference between nurses` practices and knowledge towards blood transfusion and their age, gender, level of education, years of experience and place of work. Besides, Elsayed & Hussein, (2019) revealed non-significant difference between nurses` knowledge and practice towards blood transfusion and their gender.

## Conclusion

Based on the findings of the present study concluded that the majority of nurses had unsatisfactory practices regarding health care environmental safety, safe blood transfusion procedure. Furthermore, this study concluded that there was a positive statistically significant relationship between the safe nurses' practices and their qualifications, the years of experience and

attending training programs. No statistical difference was detected between safe nurses' practices and their gender, age and working in another specialty department and frequency of performing blood transfusion. The majority of studied nurses didn't receive any training programs related to patient safety. Unsatisfactory nurses' practices might be related to the unavailability of in-service education and training programs which has a negative impact on nurses' level of safe practice and the quality of care

## Recommendations

*In line with the findings of the study, the following recommendations are made:*

The effect of implementing nursing education program on nurses' practices regarding safe blood transfusion procedure.

The effect of implementing and follow procedure check list on nurse's practices regarding safe blood transfusion procedure.

Replicate the study on large probability sampling indifferent geographical area for evidence of the result and generalization.

Detection the factors predisposing to poor quality of care regarding safe blood transfusion procedure

| Nurses' characteristics<br><br>Safety Nursing Practices, Blood Transfusion | Levels of practice | | | | Total<br>(n = 90) | | Test of<br>Significance |
|---|---|---|---|---|---|---|---|
| | Unsatisfactory<br>(n = 81) | | Satisfactory<br>(n = 9) | | | | |
| | No. | % | No. | % | No. | % | |
| **Gender** | | | | | | | |
| Male | 9 | 11.1 | 2 | 22.2 | 11 | 12.2 | $\chi^2$= 0.932 |
| Female | 72 | 88.9 | 7 | 77.8 | 79 | 88.9 | $^{FE}$p= 0.302 |
| **Age (years)** | | | | | | | |
| 21<30 | 38 | 46.9 | 6 | 66.7 | 44 | 48.9 | |
| 31<40 | 31 | 38.3 | 2 | 22.2 | 33 | 36.7 | $\chi^2$= 1.153 |
| 41 <50 | 12 | 14.8 | 1 | 11.1 | 13 | 14.4 | $^{MC}$p= 0.706 |
| **Level of education** | | | | | | | |
| Diploma | 39 | 48.1 | 2 | 22.2 | 41 | 45.6 | $\chi^2$= 19.301$^*$ |
| Technical | 34 | 42.0 | 0 | 0.0 | 34 | 37.8 | $^{MC}$p= <0.001$^*$ |
| Bachelor | 8 | 9.9 | 7 | 77.8 | 15 | 16.7 | |
| **Years of experience in the current ward** | | | | | | | |
| < 5 | 28 | 34.6 | 4 | 44.4 | 32 | 35.6 | |
| 5 < 10 | 35 | 43.2 | 4 | 44.4 | 39 | 43.3 | $\chi^2$= 0.521 |
| 10 < 20 | 14 | 17.3 | 1 | 11.1 | 15 | 16.7 | $^{MC}$p= 1.000 |
| > 20 | 4 | 4.9 | 0 | 0.0 | 4 | 4.4 | |
| **Presence of previous experience in another specialty** | | | | | | | |
| **Yes** | **41** | **50.6** | **5** | **55.6** | **46** | **51.1** | $\chi^2$= 0.079 |
| No | 40 | 49.4 | 4 | 44.4 | 44 | 48.9 | $^{FE}$p= 1.000 |
| **If yes, (specify):** | **(n = 41)** | | **(n = 5)** | | **(n = 46)** | | |
| Medical Word | 11 | 26.8 | 2 | 40.0 | 13 | 28.3 | |
| Emergency word | 7 | 17.1 | 0 | 0.0 | 7 | 15.2 | |
| Orthopedic word | 4 | 9.8 | 0 | 0.0 | 4 | 8.7 | |
| Chemotherary | 2 | 4.9 | 2 | 40.0 | 4 | 8.7 | |
| Obestatric | 5 | 12.2 | 0 | 0.0 | 5 | 10.9 | $\chi^2$= 7.242 |
| Nenrosurgeny | 3 | 7.3 | 0 | 0.0 | 3 | 6.5 | $^{MC}$p= 0.468 |
| Pediatric | 2 | 4.9 | 0 | 0.0 | 2 | 4.3 | |
| Surgical word | 6 | 14.6 | 1 | 20.0 | 7 | 15.2 | |
| Outpatient clinics | 1 | 2.4 | 0 | 0.0 | 1 | 2.2 | |
| **Previous attendance of educational course/training programs related to patient safety** | | | | | | | |
| **Yes** | **6** | **7.4** | **9** | **100.0** | **15** | **16.7** | $\chi^2$= 50.00$^*$ |
| No | 75 | 92.6 | 0 | 0.0 | 75 | 83.3 | $^{FE}$p= <0.001$^*$ |
| **If yes, (specify):** | **(n = 6)** | | **(n = 9)** | | **(n = 15)** | | |
| Educational course | 3 | 50.0 | 5 | 55.6 | 8 | 53.3 | |
| Training program | 1 | 16.7 | 3 | 33.3 | 4 | 26.7 | $\chi^2$= 2.144 |
| Conference attendance | 1 | 16.7 | 1 | 11.1 | 2 | 13.3 | $^{MC}$p= 0.752 |
| Workshops | 1 | 16.7 | 0 | 0.0 | 1 | 6.7 | |
| **Frequency of performing blood transfusion during the last month** | | | | | | | |
| < 5 times | 51 | 63.0 | 6 | 66.7 | 57 | 63.3 | |
| 5 <10 times | 14 | 17.3 | 2 | 22.2 | 16 | 17.8 | $\chi^2$= 0.755 |
| 15 < 20 times | 2 | 2.5 | 0 | 0.0 | 2 | 2.2 | $^{MC}$p= 1.000 |
| > 20 times | 14 | 17.3 | 1 | 11.1 | 15 | 16.7 | |

**Table (2) Illustrate the distribution of the nurses according to their level of safe practice regarding patient safety by domains**

| Nurse`s socio demographic data sheet | Total (N=90) | |
|---|---|---|
| | No. | % |
| **Gender** | | |
| Male | 11 | 12.2 |
| Female | 79 | 87.8 |
| **Age (years)** | | |
| < 20 | 0 | 0.0 |
| 21<30 | 44 | 48.9 |
| 31<40 | 33 | 36.7 |
| 41 <50 | 13 | 14.4 |
| 51 <60 | 0 | 0.0 |
| Min –Max. 21.00 – 50.0 | Mean ±SD. 32.24 ± 7.87 | |
| **Level of education** | | |
| Diploma | 41 | 45.6 |
| Technical | 34 | 37.8 |
| Bachelor | 15 | 16.7 |
| Other | 0 | 0.0 |
| **Years of experience in the current ward** | | |
| < 5 | 32 | 35.6 |
| 5 < 10 | 39 | 43.3 |
| 10 < 20 | 15 | 16.7 |
| > 20 | 4 | 4.4 |
| Min –Max. 1.0 – 25.0 | Mean ±SD. 7.52 ± 5.60 | |
| **Presence of previous experience in another specialty** | | |
| **Yes** | **46** | **51.1** |
| No | 44 | 48.9 |
| **If yes, (specify):** | (n=46) | |
| Medical Word | 13 | 28.3 |
| Emergency word | 7 | 15.2 |
| Orthopedic word | 4 | 8.7 |
| Chemotherary | 4 | 8.7 |
| Obestatric | 5 | 10.9 |
| Nenrosurgeny | 3 | 6.5 |
| Pediatric | 2 | 4.3 |
| Surgical word | 7 | 15.2 |
| Outpatient clinics | 1 | 2.2 |
| **Previous attendance of educational course/training programs related to patient safety** | | |
| **Yes** | **15** | **16.7** |
| No | 75 | 83.3 |
| **If yes, (specify):** | (n=15) | |
| Educational course | 8 | 53.3 |
| Training program | 4 | 26.7 |
| Conference attendance | 2 | 13.3 |
| Workshops | 1 | 6.7 |
| Others | 0 | 0.0 |
| **Frequency of performing blood transfusion during the last month** | | |
| < 5 times | 57 | 63.3 |
| 5 <10 times | 16 | 17.8 |
| 10 < 15 times | 0 | 0.0 |
| 15 < 20 times | 2 | 2.2 |
| > 20 times | 15 | 16.7 |

**Table (3): Illustrate the relationship between nurses' practice levels and their sociodemographic data**

| | Unsatisfactory | | Satisfactory | |
|---|---|---|---|---|
| | No. | % | No. | % |
| A- Nurses' safety practices before blood transfusion | 88 | 97.8 | 2 | 2.2 |
| B- Nurses' safety practices during blood transfusion | 81 | 90.0 | 9 | 10.0 |
| C. Nurses' safety practices after blood transfusion | 81 | 90.0 | 9 | 10.0 |
| D.  Nurses' safety practices regarding patient's environment | 86 | 95.6 | 4 | 4.4 |
| Overall observational checklist | 81 | 90.0 | 9 | 10.0 |
| Total Patient Safety Practices<br><br>Min- Max<br>Mean ± SD | $2.83 \pm 24.19$<br>$7.98 \pm 4.99$ | | | |

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