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# Perception of Injection Safety Measures Among In – Service Training Nurses in Selected Health Facilities in Owerri Senatorial Zone. Imo State, Nigeria

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***Abstract:*** *The daily increasing high mortality and morbidity rates from unsafe injection practices, necessitated the investigation of perception of injection safety measures among in-service training nurses in selected health facilities in Owerri Senatorial Zone, ImoState, Nigeria. Three research hypotheses were formulated to guide the study. Descriptive research design was adopted in the study, involving all the 180 in-service training student nurses in the Zone. Questionnaire was the instrument for data collection. Validation of the instrument was ensured, and reliability tested using Pearson's product moment correlation coefficient is 0.9. Data analysis was by frequency distribution and percentile ratios, while hypotheses were tested by Chi- Square. Findings indicated moderate level of perception of injection safety measures (63.3%) among in-service training student nurses in the Zone; which increased with age and years of working experiences; 24.4% and 23.9%. respectively. Preponderance of knowledge was among the females (54.4%). A significant difference was established between their age and levels of perception at* $X^2$ *= 10.02 (P>0.05) and on years of experiences;* $X^2$*= 8.924; (P>0.05). Based on the above findings, it was recommended that advancement of surveillance and educative programmes on knowledge and practice of injection safety measures should be carried out for both students and registered nurses in all health facilities in Owerri Zone*

***Keywords:*** *Injection safety measures, In-service- training nurses, Perception.*

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## I. Introduction

Unsafe injection practices are international issues of health importance. With an estimated sixteen thousand million injections administered annually in developing and transitional countries alone, the importance of promoting safe injection practices is unpredictable. Over the past few decades, failure to follow safe injection practices has burdened many developing as well as developed countries with outbreaks of infectious disease[1].Injected medicines are commonly used in healthcare settings for the prevention, diagnoses, and treatment of various illnesses. Unsafe injection practices put patients and healthcare providers at risk of infectious and non-infectious adverse events and have been associated with a wide variety of procedures and settings. This harm is preventable. Safe injection practices are part of standard precautions and are aimed at maintaining basic levels of patients' safety and provider protections[2].

WHO defined injection safety as an injection that is administered using appropriate equipment and does not result in any waste that is dangerous to the community[3]. Safe injection practices include measures taken to perform injections in a manner that is safe for patients and providers. Such measures are included in standard infection prevention practices and apply to all patients in all healthcare settings. According to WHO, each year at least sixteen billion injections are given worldwide and reused equipment poses a continual challenge, particularly in developing countries[1]. Injection safety in the context of infection prevention and control is a national document that health workers in public and private healthcare settings and related educational institutions can use to pass on the appropriate knowledge, skills, and attitudes related to safe injection practices and infection prevention as well as control[2]. Capacity building in infection prevention, control, and injection safety is one of the foundations for prevention and management of blood-borne diseases.

Unsafe injection practices are powerful engine to transmit blood borne pathogens including hepatitis B and C viruses as well as Human Immune-Deficiency Viruses (HIV). However, the consequences of these are increasingly recognized. More recently, the United States Agency for International Development (USAID) has recognized the significant role that injection safety has been given on the prevention of disease transmission. Through the support of innovative intervention, USAID has demonstrated consistent leadership and commitments to reduce the global burden of unsafe injections. Hence all health workers in different health institutions are involved in the practice of injection safety[4].Injection safety measures include hand hygiene, wearing gloves, masks, google for eye protection, face shield. Others include wearing an apron, gown, use of auto-disposable syringes and needles, not- recapping of used syringes and needles in a puncture and leak-proof safety box after use, preventing needle stick injuries, use of sterile equipment, use of the aseptic technique in giving injection among other[2].

The practice of injection safety is not without challenges. Some of the challenges encountered in the practice include but not limited to the following as summarized by INJO, lack of knowledge, lack of fund by the government, lack of materials, and lack of manpower. They also opined that it is challenging for hospitals to practice injection safety without support from Local, State, and Federal Governments. They suggested that good regulatory strategies should be formulated. The regulatory strategies of the Government should be multidisciplinary addressing policies and systems, smooth and sufficient availability of quality injectable equipment and arrangements for disposable of injection safety practices[4]. The hospitals in Owerri Senatorial Zone are always overburdened with thousands of patients on daily basis. The majority of these patients receive series of injections as their treatments, and most of these injections are given by nurses.

Incidentally, there are no studies of this nature to the best of knowledge of the researcher that have been carried out in Owerri Senatorial Zone. However, some studies have been conducted on perception and practice of injection safety measures in many parts of the world including Nigeria. There is still a gap in perception and practice of injection safety among nurses as observed by Etifit and Ojong[5], that there still exists some harmful practices like recapping of needles, reusing of syringes, and improper disposal of injection-related wastes among nurses in tertiary institutions in Cross River State, Nigeria. Whereas Omorogbe, Omuemu, and Isara reported that the practice of injection safety among nurses in Mission hospital Benin City is encouraging[6]. The researchers considering the above issues deemed it motivating enough to determine the perception and extent of the practice of injection safety measures among in-service training nurses in Hospitals in Owerri Senatorial Zone.

The study is guided by three objectives and the followinghypotheses, tested at 0.05 level of significance.

1. There is no significant influence between ages of in-service training nurses in selected health facilities in Owerri Senatorial Zone and their perception of injection safety measures.
2. There is no significant influence between gender of in-service training nurses in selected health facilities in Owerri Senatorial Zone and their perception of injection safety measures.
3. Years of experience of in-service training nurses in selected health facilities in Owerri Senatorial Zone is not significantly influence by their perception of injection safety measures

## II. Literature Review

Researches have been conducted on perception and practice of injection safety measures. Those related to this study were reviewed.A study was carried out on the knowledge, attitude, and practice of injection safety measures among nurses in two hospitals in Ibadan, Nigeria[7]. The authors used a sample size of 385 nurses and the study was a comparative one. The result revealed high knowledge level of injection safety measures (70.4%), and that the high level of knowledge was not translated to practice, that about half of them (50.4%) recently sustained sharp injury trough intramuscular and subcutaneous injections. A similar study carried out to evaluate knowledge of safe injection among preoperative nurses in tow tertiary hospitals in Lagos, Nigeria, using 100 respondents as sample size. The result showed a low level of knowledge of injection safety measures (28.8%). Nurses with Bachelor degree (BNSc) in addition to Registered Nursing (RN) and Registered Midwifery (RM) and Registered Preoperative Nursing (RPON) qualifications have better knowledge of safe injection (100% vs. 3.4%. $p< 0.001$) and better knowledge of the characteristics of a safety box (100% vs.40.7%. $p<0.001$) than nurses with RN, RM and RPON only[8]. Another study conducted by Efifit, and Ojong[5] on knowledge and practice of safe injection among nurses in tertiary institutions in Cross River State, using 120 nurses as sample size. The result revealed that many nurses had good knowledge of injection safety measures and that majority practice it. A study in South South Nigeria oninfection control by health providers in secondary health care facility revealed high level of knowledge on injection safety and prevention of infections[9]

Enwere and Diwe[10]conducted a study on knowledge, perception and practice of injection safety and health care waste management among teaching hospital staff in South Eastern Nigeria: an intervention study. The study used cross-sectional design. Nurses comprised 62.8% (98/156) of the population. Data was collected

using questionnaires. The result showed that the hospital staff still recaps needles syringes after use 45% (65/145). Half (50.6% = 78/154) of the respondents had had a previous needle prick injury. All doctors and laboratory scientists always use gloves compared to 94.8% (91/96) nurses while handling patients or materials. Another group of researchers carried out studies on knowledge and attitude of primary health care workers (PHCWs) in the North Central State of Nigeria towards safe injection. The study was a cross-sectional descriptive one. The result revealed that more than 60% of PHCWs had good knowledge of unsafe injection while over 80% of them had a good attitude, while cadre, (p =0.00064413), training (p = 0. 000000), and years of experience (p = 0.00194655) significantly affect their knowledge[11].

Adeleye et al[8] in their study to evaluate knowledge of safety injection among preoperative nurses in two tertiary hospitals in Lagos, Nigeria equally discovered that nurses with bachelor degree (BNSc) in addition to Registered Nurse (RN), Registered Midwife (RM) and registered Preoperative Nursing (RPON) qualifications have better knowledge of safe injection (100%vs. 3.4 % p< 0.001).Study conducted among prison health workers on the knowledge and practice of injection safety among workers of Nigerian prison service health facilities in Kaduna State, using 138 prison health workers sample size proved that there was a significant difference between knowledge and practice of injection safety in relation to years of experience of the staff (p-value 0.032)[12].

## III. Materials and Methods

**3.1.Research Design:**The researchers used survey research design in carrying out this study. The design explained how data are collected, recorded and analyzed, its involves a description of events, situation, and phenomenon in their natural setting[13]

**3.2. Area of Study:**The area of study was Owerri Senatorial Zone. This is located at latitude $6^0$ 56'E and longitude to 70 28'E and longitude, $5^0$ 40'N to $5^0$ 10'N. Owerri Senatorial Zone is one of the senatorial Zones in the Imo State of Nigeria. It is made up of 9 local government areas, namely; Aboh – Mbaise, Ezinihitte, Ngor – Okpala, Mbaitoli, Ikeduru, Owerri – West, Owerri – North and Owerri Municipal(i.e. the city center)It lies within the lowlands and scape land of the Southern Nigeria, and has over 150cm of rainfall per annum, consequently throughout the year (except in January).

**3.3.The Population of Study:**The population of the study was comprised of one hundred and eighty (180) in-service training student nurses who were posted to selected government hospitals in Owerri Senatorial Zone for clinical experiences. The hospitals include:

1. Federal Medical Centre Owerri = 90 nurses
2. Nworieubi Health Center = 40 nurses
3. Ogbaku Health Centre = 50 nurses

**Total 180nurses**

**3.4. Sample/Sampling Technique:** Since the population was small, the researcher included all the 180 in-service training nurses for the study. No sampling technique was used.

**3.5. Instrument for Data Collection:**The main instrument for data collection was self-developed structural questionnaire. The questionnaire was arranged in two sections. Section 'A' consisted of three questions on demographic information, while 'B' consisted of ten questions on perception of injection safety measures. Questions on the perception of injection safety measures were patterned into 'yes" and "no" university grading system was used to identify the level of perception. Thus scores from 70% and above were rated as high level of perception, 50% to 69% was moderate perception, and 40% to 49% was low level of perception.

**3.5.1. Validation of the Instrument:**The drafted copies of the questionnaire were validated by three lecturers from Nursing, one from Public Health in Imo State University Owerri, One from Measurement and Evaluation from Alvan Ikeoku Federal College of Education Owerri.

**3.5.2.Reliability of the Instrument:**A test – retest was conducted using 18 in-service training nurses from Orlu senatorial zone in Imo State University Teaching Hospital, Orlu who were not part of this study. The result was computed using Pearson's Product Moments Correlation Coefficient. The result yielded positive 0.9.

**3.6. Method of Data Collection:**A letter of permission was given to the Medical coordinators of the hospitals concerned and with their permission the researchers were introduced to the ward heads and the

students and with the help of the ward heads the questionnaire were distributed to the respondents and were collected from them after. Written consent was sought from respondents and participation was voluntarily

**3.7. Method of Data Analysis:**Data collected were analyzed using frequency and percentages. The hypotheses were tested using Chi-Square Statistics.

## IV. Results

**Research question 1:** What is the level of perception of injection safety measures among in-service training nurses in hospitals in Owerri Senatorial Zone?

**Table 1:** Frequency distribution of respondents' level of perception of injection safety measures.

| **Facts about injection safety measures include** | **Yes** | **No** | **Total** |
|---|---|---|---|
| 1. One given with appropriate equipment | 124(68. 9%) | 56(31.1%) | 180(100%) |
| 2. Maintaining hand hygiene while giving injection | 116(64.4%) | 64(35.6%) | 180(100%) |
| 3. Use of auto disposable syringes | 122(67.8%) | 58(32.2%) | 180(100%) |
| 4. Use of personal protective equipment | 120(66.7%) | 60(33.3%) | 180(100%) |
| 5. Observation of aseptic techniques | 111(61.7%) | 69(38.3%) | 180(100%) |
| 6. Appropriate disposal of injection of injection waste. | 109(60.6%) | 71(37.4%) | 180(100%) |
| 7. Appropriate disposal of injection of injection waste | 112(62.2%) | 68(37.8%) | 180(100%) |
| 8. Avoiding recapping of needles | 114(63.3%) | 66(36.7%) | 180(100%) |
| 9. Identifying safe anatomical site for injection | 106(58.9%) | 74(41.1%) | 180(100%) |
| 10. Describing a nursing care a patient needs to avoid complications | 102(56.7%) | 78(43.3%) | 180(100%) |
| **Grand total** | **1136** | **664** | **18000** |
| **Average** | **114(63.3%)** | **66(36.7%)** | **180(100%)** |

Table one shows frequency distribution of respondents' level of perception. The result reveals that on the average, 114(63.3%) of them had moderate perception while 66(36.3%) of them on the average had low perception. Generally the respondents had moderate perception on the injection safety measures instead of high perception.

**Hypothesis 1:** There is no significant influence between ages of in-service training nurses in selected health facilities in Owerri Senatorial Zone and their perception of injection safety measures.

**Table 2:Contingency Chi- square analysis showing influence of age on perception of injection safety measures among in-service training nurses in selected health facilities in Owerri** Senatorial Zone

| **Age** | **Yes** | **No** | **Total** |
|---|---|---|---|
| Less than 20 years | 5(2.8%) | 9(5.0%) | 14(7.8%) |
| 20 to 29 years | 29(16.1%) | 18(10.0%) | 47(26.1%) |
| 30 to 39 years | 44(24.4%) | 25(13.9%) | 69(38.3%) |
| 40 years and above | 36(20.0%0 | 14(7.8%0 | 50(27.8%) |
| **Grand total** | **114(63.3%)** | **66(36.7%)** | **180(100%** |

**$X^2$Cal. = 10. 312, df =3 $X^2$tabulated = 7.815. P< 0.05.**

Contingency chi- square analysis influence of age on perception of injection safety measures among in-service training student nurses in Owerri Senatorial Zone. The result reveals

that there is no significant difference among in-service training nurses of various ages in Owerri Senatorial Zone in their level of perception of injection safety measures, the result revealed calculated $X^2$ of 10.312 at degree of freedom (df) of 3. This result is against tabulated $X^2$ of 7.815 $p<0.05$. Therefore there is significant difference in the level of perception of injection safety measures among in-service training student nurses in Owerri Senatorial Zones based on their differences in age. The null hypothesis is rejected

**Hypothesis 2:** There is no significant influence between gender of in-service training nurses in Owerri Senatorial Zone and their of perception of injection safety measures.

**Table 3:** Contingency Chi –square analysis showing influence of gender of in-service training in selected health facilities in Owerri Senatorial Zone and their perception of injection safety measures.

| **Gender** | **Yes** | **No** | **Total** |
|---|---|---|---|
| Male | 16(8.6%) | 11(6.1%) | 27(15.0%) |
| Female | 98(54.4%) | 55(30.6%) | 153(85.0%) |
| **Grand Total** | **114(63.3%)** | **66(36.7%)** | **180(100%)** |

Chi- calculated=0.227, df=1, Chi- critical=3.841, p>0.05.

Finding from table 3 above, revealed calculated Chi- Square of 0.227at df of 1. This result is less than the table value of 3.841, p>0.05. Therefore there is no significant difference between male and female in-service training nurses in Owerri Senatorial Zone in their perception of injection safety measures. The null hypothesis is upheld.

**Hypothesis 3:** There is no significant influence between in-service training nurses of various years of experiences in Owerri Senatorial Zone and their level of perception of injection safety measures.

**Table 4:** Contingency Chi-square analysis showing level of perception of injection safety measures based on years of working experiences.

| **Years of experiences** | **Yes** | **No** | **Total** |
|---|---|---|---|
| Less than 5 years | 15(8.3%) | 11(6.1%) | 26(14.4%) |
| 5 to 10 years | 24(13.3%) | 18(10.0%) | 42(23.3%) |
| 11 to 16 years | 43(23.9%) | 21(11.7%) | 64(35.6%) |
| 17 years and above | 32(17.8%) | 16(8.9%) | 48(26.7%) |
| **Grand total** | **114(63.3%)** | **66(36.7%)** | **180(100%** |

Chi- square calculated= 8.924, df=3, Chi-square critical=7.815, p<0.05

Table 4 shows the calculated $X^2$ was 8.924 at df of 3. This was more than table value of 7.815, p<0.05. Therefore the null hypothesis was rejected. There is significant difference among in-service training student nurses in Owerri Senatorial zone in their perception of injection safety measures based in their years of working experiences.

## V. Discussion.

**Perception of injection safety measures among in-service training nurses in hospitals in Owerri senatorial zone**Findings revealed that majority of the in-service training student nurses had moderate perception on injection safety measures whereas some had low perception. This finding does not correspond with the earlier findings of Adejumo and Dada[7] that discovered high level of perception of injection safety measures among nurses in two hospitals in Ibadan, Nigeria. Etifit and Ojong[5] also discovered that many nurses in tertiary institutions in Cross River State, Nigeria had high perception of injection safety measures. This may be because the study was conducted in a non tertiary health institution.

**Perception of injection safety measures among in-service training nurses in hospitals in Owerri senatorial zone based on their ages;** The result revealed that age 30 and 39 had moderate perception . There was significant influencebetween the level of perception of injection safety measures among in-service training student nurses in Owerri Senatorial Zone based on their ages. Enwere and Diwe[10] discovered that nurses on the age range of 30-40 years had higher level of perception and knowledge on injection safety measures.

**Perception of injection safety measures among in-service training nurses in hospitals in Owerri Senatorial Zone based on their gender;** The result that most of the females had higher perception on injection safety measures than the males . There no significant influence between the level of perception of injection safety measures among the in-service training student nurses in Owerri Senatorial Zones based on their gender. This finding is in consonant with the earlier findings of the researchers who discovered in Lagos Nigeria that female nurses had higher level of knowledge and perception on injection safety measures[8].

**Perception of injection safety measures among in-service training nurses in hospitals in Owerri senatorial zone based on their years of experiences;** The result revealed that out of 26 students who had less than 5 years experiences, few had moderate perception while some had low perception. Many of them had between 11 and 16 years experiences and out of this number, majority had moderate perception while some had low perception. Out of 48 of them who had 17years and above experiences, majority had moderate perception while few had

low perception. Chi - Square to analysis revealed no significant influence between in-service training nurses of various years of experiences in Owerri Senatorial Zone and their level of perception of injection safety measures. Therefore the null hypothesis was rejected. It was discovered that those who had 11 to 16 years experiences had higher level of perception. This finding is in line with the earlier findings of Bolarinwa et al[11] that discovered that nurses had moderate perception of injection safety in North Central Nigeria. Onyemoch et al[12] found out that nurses had moderate perception and fair practice on injection safety in Kaduna State.

## VI. Conclusion.

Based on the findings, the researcher asserts that the in- service training student nurses in Owerri Senatorial Zone had moderate level of perception of injection safety measures. Females had more moderate level of perception than the males. There are significant differences in the level of perception among them based on age and years of experiences.

## References


[1]. World Health Organisation, (2015). New injection safety policy and global campaign. Accessed fromwww.who.on 2/5/16
[2]. Centre for Disease Control, (2015). Injection safety. Assessed from www.cdc.govt/injectionsafety on 28/7/16.
[3]. World Health Organisation, (2010). Ensuring the safe and appropriate use of injections at the country level. Accessed from www.who.int/injectionsafety. on 23/6/16
[4]. INJO (2011). The Beneficiary Angel of Injection Safety. Accessed from www.injo.co.in/injection safety, html on 23/6/16
[5]. Etifit, R. E., & Ojong, I. N. (2010). Knowledge and practice of safe injection among nurses in tertiary institutions in Cross river State, *Global Journal of Medical Sciences. 9(1): 5-11*
[6]. Omorogbe V.E.Omuemu V. O; Isara A. R.(2012). Injection Safety Practices Among Nursing Staff of Mission Hospitals in Benin City , Nigeria. *Annals of African Medicine 11(1):36-41*
[7]. Adejumo, P. O., & Dada, F. A. (2013). A comparative study on knowledge, attitude, and practice of injection safety among nurses in two hospitals in Ibadan, Nigeria. *International journal of African control 9(1) 18 -21.*
[8]. Adeleye, B. B., Balogun, M. & Quadri, A. (2016). Evaluating Knowledge and perception of injection safety among nurses in two tertiary hospitals in Nigeria. Assessed from http://stti.com/congrs16/webprogram/paper79838HTML On 28/7/16
[9]. .jong,I.N., Mgbekem,M.A.,& Uka,V.K. (2017). Infection control practices among health care providers in secondary health facility in Cross River State, Nigeria. *International Journal of Development Research IJDR 7(1): 11292-11296.*
[10]. Enwere, O. O., & Diwe, K. C. (2014). Knowledge, perception and practice of injection safety and healthcare waste management among teaching hospital staff in south-east Nigeria: an
[11]. intervention study.*Pan Afr Med j. 17(218) 3084.*
[12]. Bolarinwa,O. A., Salaudeen, S A., Musa, O. I., &Akande, T. M. (2011). Knowledge and attitude Of primary healthcare workers in a North Central State of Nigeria towards safe injection. *International Journal of Academic Research. 3 (3). 1-6*
[13]. Onyemocho, A., Anekoson, J. I. & Enekola., O. P. (2013). Knowledge and practice of injection Safety among workers of Nigerian prison service of health facilities in Kaduna State.*American journal of public health research. 1 (7). 171 – 176.*
[14]. Osuala, E. O. (2005). Research and statistics in nursing-related fields. Nnewi: Rex Charles and Patrick ltd.


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