



Nurses' Insights on Students' Performance in Administering Intramuscular Injection at Tobruk Medical Center

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Abstract

The research is a quantitative non-experimental research with purposive sampling using nurses at Tobruk Medical Center as respondent with the students doing their hospital duty as subject. Questionnaire method was used for data collection with the aim of finding the nurses insights on students' performance in administering intramuscular injection at the hospital based on their observation. A total of 30 nurses were used in the study.

Performance were computed based on assessment, planning and implementation of the students'. The result shows that the students' performance as perceived by the nurses has an overall weighted mean of 3.24 and standard deviation of 0.56 equivalent to good performance. When grouped according to profile, it appears that there is no significant difference in terms of gender (T-stat=0.06882656, p-value=0.945616854), age (F-stat=1.193781718, p value=0.318568251) and years of experience (F-stat=1.042539568, p-value=0.390283827). No relationship was establish based on the statistical result.

Keywords: Intramuscular Injection; Parenteral Drug Administration; Intensive Nursing Practicum.

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1. Introduction

Injection is a process or an act of putting liquid, usually drugs or medication, into a person's body by means of a needle and a syringe [1]. Intramuscular injection on the other hand, as one of injection procedure, is a method used to administer medications into the deep muscle tissue for the purpose of quick absorption due to the richly supplied blood vessels in the muscle [2, 3]. Considered one of the procedures performed in the RLE and INP of Tobruk University College of Nursing [4, 5, 6], also used at Tobruk Medical Center with the patients, and as part of parenteral drug administration otherwise known as injection using a needle and a syringe [7]. Students' performance and procedures basis were adapted from Delmar's following a certain skill set [7] at least in the classroom setting. These processes in the laboratory practice were vital to clinical learning as it plays a crucial role in elevating clinical competences of nursing students for it provides anticipatory knowledge of the organizational contexts through which nursing care is delivered in nursing education [4, 8]. Proper nursing care for patients needs intensive practice [7]. As team teaching is ideal in academic setting, should assigned teachers actively share the instruction of content and skills to their students', and accepting equal responsibility for the education of students by dynamically being involved throughout the class period [9]. Together with that, exposure of students to practical demonstration in the classroom laboratory would eventually improve their performance in the hospital [10]. Teachers approach should include preparation and planning to stimulate student in learning experience [11] by taking advantage of team teaching strategy including, taking various teaching styles and activities presented to the learners, and providing more time for both one on one and small group instruction [12, 13]. Through these, students would easily apply things learned at school in hospital settings and exercise procedures they performed from the school laboratory [14].

2. Methods and Materials

The research employed a quantitative non-experimental research with purposive sampling assessment were the respondents are nurses from the hospital. The study used questionnaire method among staff nurses with assigned group of student nurses rotated in selected wards of the hospital.

The study aims to find out the nurses insights on students' performance in administering intramuscular injection at Tobruk Medical Center based on their observation during the students' hospital duty. The study would focus on the performance evaluation of students' Assessment, Planning and Implementation as observed by the Nurses from the hospital, the Documentation performance was not evaluated. The study is limited to Tobruk Medical Center as setting with only 30 nurses/respondent participating on the research.

2.1 Study Sample

The respondents were thirty staff nurses of Tobruk Medical Center who had direct interaction with student nurses from Tobruk University.

The proponents were able to collect data from 19 male and 11 female respondents who actively participated on the study.

2.2 Research Tools/Instrument

The researcher used the tested and formulated clinical instructor made procedure currently used as a checklist/evaluation tool for RLE and INP in terms of intramuscular injection [15].

Questionnaire were divided into two segments, first, nurses profile in terms of gender, age and years of experience, and second, performance of students based on assessment, planning and implementation on intramuscular injection.

2.3 Data Measures

Collected data were tallied and organized into tables to permit ease of analysis. Measures of central tendency using weighted mean is used to look for variation in the relative contribution of individual data values to the mean.

After which, the computed results are then analyzed with the use of an interpretation table with specific mean score ranges and a subsequent descriptive rating. Responses are based on nurses' perception, basing their insights thru observation when they were with the students. Shown below is the interpretation table used for study.

Table 1: Interpretation of Nurses Insights on Students Performance in Administering Intramuscular Injection at Tobruk Medical Center Administration.

Scale	Range	Adjectival Interpretation
4	3.51 – 4.00	Very Good
3	2.51 – 3.50	Good
2	1.51 – 2.50	Fair
1	1.00 – 1.50	Poor

Independent t-test was used to compare the means between genders of the respondents. ANOVA was used to get the difference in the variance when grouped according age and years of experience of the nurses.

2.4 Software Tools

Microsoft Excel was used by the researchers as a tally sheet, using function average for mean, stdev for standard deviation. Tallied values also underwent data analysis tool pack to get the difference of mean via t-test, and one way ANOVA, employing some help from Minitab statistical version 17 to double check statistical results.

3. Results and Discussion

Data collected were structured using table to permit ease of investigation. Frequency distribution of profile, measures of central tendency like weighted mean and standard deviation were presented together with equivalent adjectival rating. For comparison of data t-test, ANOVA and p value were used.

Table 2: Profile, gender, age, year of experience.

Profile	Category	f	%
Gender	Male	19	63.33
	Female	11	36.67
Age	20 – 29	14	46.67
	30 – 39	11	36.67
	40 and above	5	16.67
Years of Experience	0 – 5	14	46.67
	6 – 10	8	26.67
	11 – 15	5	16.67
	16 and above	3	10.00

A total of 30 respondents were asked to provide their perception on students’ performance on intramuscular injection via a questionnaire. There are 19 male and 11 female respondents. Younger respondents of aged 20-29 leads the majority of the nurses with 14, followed by 30-39 years old with 11 and 40 and above has 5. In terms of years of experience, 14 nurses has length of experience of 5 years and below, 8 nurses belongs to 6 to 10 years of experience, 5 nurses with 11 to 15 years, and 3 nurses has a length of 16 years and above. Frequency and percentage of distribution were shown in Table 2.

Table 3: Nurses Insights on Students Performance in administering Intramuscular Injection.

Question on Assessment, Planning, Implementation	Weighted Mean	Standard Deviation	Adjectival Rating
1. Review the medication record in the facility to identify if the medication is to be given with in the shift	3.57	0.50	Very Good
2. Examine the MAR for accuracy and completeness	3.23	0.43	Good
3. Review information about the medication to be administered	3.23	0.57	Good
4. Assess the patient’s ability especially the ability to change position	3.27	0.52	Good
5. Assess the need for prn medications	3.07	0.52	Good
Assessment	3.27	0.51	Good
Determine the individualized patient outcomes in relation to the injection to be administered that includes the right patient receives the right medication in a right dose by the right route at the right time	3.23	0.57	Good
Obtain the supplies needed including appropriate needle and syringe, alcohol swab	3.13	0.73	Good
Planning	3.18	0.65	Good
1. Wash or disinfect the hands	3.30	0.65	Good
2. Obtain the official medication administration record	3.10	0.66	Good
3. Read from the record the name of the medication to be given	3.37	0.56	Good
4. Access the medication supply and check the labels on the medication, compare the medication s to MAR and choose the correct one.	3.27	0.69	Good
5. Pick up the medication and check the label again	3.13	0.57	Good
6. Prepare the intramuscular injection including calculating the	3.23	0.50	Good

volume, drawing up the correct dosage			
7. Prepare any additional medications to be given	3.37	0.61	Good
8. With all medications out, check each unit dose medication label with the MAR once again	3.13	0.68	Good
9. Obtain the patient's identification to be taken to the bedside	3.17	0.46	Good
10. Identify the patient using two identifiers, by asking the name and checking the wristband	3.17	0.53	Good
11. Explain how the medication will be administered and identify which site was used for the previous injection	3.17	0.59	Good
12. Administering the injection: close the door, pull the curtain and make sure there is adequate lighting	3.13	0.68	Good
13. Position the patient for access to the injection site and put on clean gloves	3.23	0.63	Good
14. Choose a correct intramuscular site for the amount of medication to be administered	3.40	0.50	Good
15. Clean the skin with an alcohol wipe, using a circular motion. Allow skin to dry. Place the swab between the third forth fingers in the non-dominant hand	3.43	0.63	Good
16. Remove the needle guard, being careful to pull it straight off and away from the needle	3.27	0.45	Good
17. Using the non-dominant hand, make the skin taut over the injection site	3.27	0.45	Good
18. Hold the syringe like a dart (the barrel between the thumb and index finger of the dominant hand) the needle should be 90 degree angle.	3.30	0.47	Good
19. Insert the needle through the skin with a quick dart-like thrust at the correct angle. Transfer the non-dominant hand to the barrel of the syringe and transfer the dominant hand to the plunger	3.23	0.43	Good
20. Pull back gently on the plunger	3.17	0.46	Good
21. If no blood appears in the syringe, inject the medication by pushing the plunger	3.20	0.55	Good
22. Quickly remove the needle and then gently massage the injection site with the alcohol wipe (unless contraindicated)	3.20	0.48	Good
23. Lower the bed and leave the patient in comfortable position	3.20	0.66	Good
24. Discard the syringe and needle in the closest sharps container without replacing the needle guard	3.17	0.70	Good
25. Remove gloves and wash or disinfect the hands	3.43	0.57	Good
Implementation	3.24	0.57	Good
Overall Weighted Mean	3.24	0.56	Good

Table 3 shows the nurses insights on students' performance in administering intramuscular injection. In terms of assessment, the weighted mean is at 3.27 and deviation of 0.51, for planning 3.18 and 0.65 and implementation at 3.24 and 0.57 on weighted mean and deviation respectively. The overall weighted mean was shown at 3.24 and an average standard deviation of 0.56. Based on data measures, the weighted mean was interpreted to be good, meaning the performance of students based on perception of nurses was good overall. A study on students' performance and efficacy on parenteral administration which includes intramuscular injection were performed by getting the result of the return demonstration on the final exam [4, 6] was one of the basis of this study. The current study shows that the result in terms of intramuscular injection procedure has an adjectival rating of Good.

Despite the overall mean resulting to an adjectival rating of good, it must be considered that despite widespread agreement that clinical experience is central to learn nursing, school setting suggests that teachers’/nurses’ and students’ focus on task completion rather than a deeper understanding and readiness for nursing practice [16] and may be present during the observation. Skills on documentation was not observed in the study since nurses’ and students’ focuses on getting the job done and completing the requirements rather than loving their task [17].

Table 4: Difference when group according to gender, age, year of experience.

Profile	Category	Mean	T-stat/F-stat	P value
Gender	Male	3.25	T=0.06882656	0.945616854
	Female	3.24		
Age	20 – 29	3.31	F=1.193781718	0.318568251
	30 – 39	3.19		
	40 and above	3.16		
Years of Experience	0 – 5	3.29	F=1.042539568	0.390283827
	6 – 10	3.28		
	11 – 15	3.14		
	16 and above	3.07		

In terms of difference when group according to profile, table 4 shows that in gender male has a mean of 3.25 while female has 3.24, there are no significant difference observed as the t-stat was at 0.06882656 and p-value of 0.945616854. Using ANOVA the age group shows a mean of 3.31, 3.19 and 3.16 for age 20-29, 30-39 and 40 and above respectively, F-value of 1.193781718 with a p value of 0.318568251. Years of experience shows a mean of 3.29, 3.28, 3.14 and 3.07 on 0-5, 6-10, 11-15 and 16 and above groups respectively, F-stat at 1.042539568 and p-value of 0.390283827. Both age group and years of experience group shows no significant difference between them as shown in the result of ANOVA.

This is in contrast on the result of a similar study in part about efficacy of students’ on parenteral administration were significant difference was observed in terms of intramuscular injection when grouped according to gender [4]. Nurses’ observation based on perception may have a differing opinion as compared to observation performed in laboratory settings.

4. Conclusion

The study presented the result of nurses’ insight on students’ performance on administering intramuscular injection at Tobruk Medical Center. The statistical results shows that the students performed generally well in the procedure in terms of assessment, planning and implementation with an overall weighted mean of 3.24, interpreted as good. It shows no significant difference when grouped according to gender based on t-test.

The variance proved to show insignificant difference based on ANOVA when the nurses’ are grouped according to age and years of experience. Overall the study proved that the students are competent in intramuscular injection of parenteral drug administration in the actual setting as perceived by the nurses at the hospital. Collected data in this study can be used to improve quality of nursing education and practice by enhancing students’ weak points through proper and extensive training and complementing their strong area in the area of intramuscular injection of parenteral drug administration [4, 5, 6].

5. Recommendation

It is recommended based on the findings and conclusion, that the College of Nursing from Tobruk University enhance Related Learning Experience curriculum for the students to further improve their skills prior to exposure in their hospital duty with more time for students to practice and enhance their skills [6], despite an overall Good rating they got from the nurses perception and observation. Emphasis by the faculty that knowledge, skills and attitude are pertinent in providing care for patients, making sure that students apply it in classroom and clinical area [6]. Developing proficient motor skills involves a continuum that moves understanding and performing skills are internalized and executed automatically and require deliberate practice [18]. There are also proof that educational intervention could improve clinical competence of practitioners [19], so a focus on this is tantamount to better performance ahead for the students'. Furthermore, the investigators recommend additional study to address factors that may affect the result like including documentation category in the skills to be included in intramuscular injection, for proper recording of data [6]. More respondents categorized in different area in the hospital may be included as well in the future study.

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