

## COMPARE THE EFFECTIVENESS OF GEORGE AND DOTO'S FIVE-STEP METHOD WITH THE TRADITIONAL SODOTO APPROACH IN TEACHING CLINICAL SKILLS TO NURSING STUDENTS

Liaqat Simab<sup>\*1</sup>, Noor Islam<sup>2</sup>

<sup>\*1</sup>MSN, Registered Nursing officer, DHQ Hospital, Landikotal, Khyber.

<sup>2</sup>MSN, Registered Nursing officer, RHC, Tarparter, DIR Upper.

<sup>1</sup>liaqatsimab125@gmail.com

DOI: <https://doi.org/10.5281/zenodo.18169837>

### Keywords

Nursing education, Clinical skills training, George and Doto's Five-Step Method, SODOTO approach, Intramuscular injection, Skill competency

### Article History

Received: 01 November 2025

Accepted: 15 December 2025

Published: 29 December 2025

Copyright @Author

Corresponding Author: \*

Liaqat Simab

### Abstract

**Background:** Effective teaching of clinical skills is essential for ensuring nursing students' competence and patient safety. Traditional methods such as the See One, Do One, and Teach One (SODOTO) approach are commonly used but lack structured feedback and standardized skill breakdown. George and Doto's Five-Step Method offers a systematic framework that may enhance skill acquisition and performance.

**Objective:** To compare the effectiveness of George and Doto's Five-Step Method with the traditional SODOTO approach in teaching intramuscular (IM) injection skills to nursing students.

**Methods:** A quasi-experimental study was conducted at the Institute of Nursing Sciences, Sarhad University of Science and Information Technology, Peshawar. Forty second-year BSN students were divided into two groups: Group A (n = 20) was taught using George and Doto's Five-Step Method, and Group B (n = 20) using the SODOTO approach. Students' performance was assessed using a standardized 25-item IM injection checklist. Data were analyzed using descriptive statistics and an independent t-test.

**Results:** Students taught using George and Doto's Five-Step Method achieved significantly higher mean performance scores (Mean = 21.00) compared to the SODOTO group (Mean = 18.70), with a statistically significant difference (p = 0.015).

**Conclusion:** George and Doto's Five-Step Method is more effective than the SODOTO approach in teaching IM injection skills. Incorporating structured teaching strategies into nursing curricula may enhance clinical competency and improve educational outcomes.

### INTRODUCTION

Nursing education is a dynamic discipline that must always adapt to changing healthcare demands. Clinical skills are vital for nursing students since they are the cornerstone of patient care. Nursing clinical preceptor immersion programs are

integrated throughout nursing school curricula, ranging from diploma to associate and baccalaureate undergraduate practice. Despite limited clinical venues and growing faculty shortages, nursing schools continue to expand their curriculum.

(Chicca & Shellenbarger, 2020). Clinical preceptors are specialists in the domain of practice who help nursing students' transition to practice and role competency (Brink et al., 2020).

Clinical skills are used to eliminate the clinical competency gaps found in seminal research as important determinants in graduate nursing inadequacies in clinical knowledge, skills, and attitudes (Kim & Ahn, 2019). Clinical skills are sought after for nursing practice oversight for their expertise and receptiveness to working with others, and the majority are picked based on unit availability. (SIRSIKAR et al., 2024). Effective clinical skills training is vital in nursing education because it directly affects patient care and safety (Pérez-Perdomo & Zabalegui, 2023).

Various teaching methodologies have been developed to enhance skill acquisition, competency, and retention among nursing students. Two commonly used approaches in clinical skills training are the traditional "See One, Do One, Teach One" (SODOTO) method and the structured five-step method developed by George and Doto (J. H. George & Doto, 2001).. Each approach has its strengths and limitations, influencing their effectiveness in different educational contexts. The SODOTO method has been widely used in medical and nursing education for decades. It is based on the apprenticeship model, where students observe a procedure, perform it under supervision, and subsequently teach it to peers (Kargbo, 2020). This approach emphasizes experiential learning and peer teaching; however, it has been criticized for its variability in instruction quality and lack of standardized feedback, which can lead to inconsistent skill acquisition among learners (Kargbo, 2020).

In contrast, George and Doto's five-step method provides a structured framework for teaching clinical skills. This approach includes (1) demonstration without commentary, (2) demonstration with commentary, (3) deconstruction and explanation of key steps, (4) supervised student practice with feedback, and (5) independent student performance (George & Doto, 2001). The structured nature of this method ensures systematic skill acquisition and provides opportunities for guided practice and corrective feedback, making it a more reliable

approach for training novice nursing students (Pandey et al., 2024). With increasing emphasis on competency-based education, it is essential to evaluate the effectiveness of these two teaching strategies in nursing education. This study aims to compare the efficacy of George and Doto's five-step method with the traditional SODOTO approach in enhancing clinical skills competency among nursing students. The findings of this comparison could provide insights into best practices for clinical skills instruction and inform curriculum development in nursing education (Hepburn et al., 2024).

### Prioritization of the Problem

During our clinical practicum, several teaching-related issues were identified:

1. Traditional methods like SODOTO (See One, Do One, and Teach One) are widely used but have notable limitations.
2. Peyton's Four-Step Approach, which includes demonstration, deconstruction, comprehension, and performance, offers a more structured framework for skill acquisition.
3. The One-Minute Preceptor is another teaching method designed to help preceptors provide effective feedback and guide students in clinical settings.
4. George and Doto's five-Step Method provides a systematic and structured approach to teaching clinical skills.

Inconsistent competency levels among nursing students have been observed during clinical practice. The lack of a structured and standardized teaching approach contributes to variability in skill performance and reduced confidence among students. This issue is critical to address, as it directly impacts patient safety and the overall quality of nursing care. Specific gaps identified include limited feedback in the SODOTO approach and the absence of structured, step-by-step teaching methods (Archer et al., 2015). After thorough discussion and voting, the topic of comparing structured teaching strategies was prioritized to address these challenges and improve nursing education outcomes (Archer et al., 2015).

### Justification of the Problem

Competency in clinical skills is essential for patient care and nursing professionalism. The SODOTO method, commonly used in clinical training, lacks a structured feedback mechanism and comprehensive skill breakdown, potentially hindering skill mastery. (Paralikar et al., 2022) George and Doto's Five-Step Method offers a more structured approach, which can provide a clearer learning pathway for novice students, potentially improving skill retention and performance (George & Doto, 2001). Nursing students require structured teaching to master essential skills. A stepwise method like George and Doto's ensures systematic skill acquisition, reducing variability in learning outcomes. (Kochis et al., 2024)

### Current Teaching Methodology

Currently, the SODOTO method is widely used in the clinical skills lab, which involves

**See One:** The instructor demonstrates the skill.

**Do One:** The student performs the skill under minimal supervision.

**Teach One:** The student teaches the skill to peers without structured feedback.

While this approach encourages hands-on learning, it often lacks detailed breakdowns of critical skill components, feedback loops, and repetition, which are essential for reinforcing proper technique and building confidence among students. The lack of consistent feedback may also lead to the perpetuation of errors and skill gaps.

In contrast, George and Doto's Five-Step Method provides a stepwise structure emphasizing demonstration, deconstruction, student understanding, and guided practice, potentially resulting in more effective skill acquisition and retention (Paralikar et al., 2022).

### PICOT

**P (Population):** Novice BSN nursing students in clinical training.

**I (Intervention):** George and Doto's Five-Step Method.

**C (Comparison):** Traditional SODOTO approach.

**O (Outcome):** Improved clinical skill competency, retention, and student satisfaction.

**T (Time):** Over a 2-month period.

### Purpose of Evidence Base Project

The purpose of this study is to investigate and compare the effectiveness of George and Doto's Five-Step Method with the traditional SODOTO approach in nursing education. The study aims to:

- Enhance clinical skill competency among BSN students.
- Improve long-term retention of clinical skills.
- Increase students' self-confidence and satisfaction in skill performance.
- Identify the benefits of structured teaching methods over conventional strategies.
- Provide evidence-based recommendations for curriculum development in nursing education.

### Hypothesis

**Null Hypothesis:** There is no significant difference in the performance of nursing students taught IM injection skills using George and Doto's Five-Step Method and the SODOTO approach.

**Alternative Hypothesis:** Nursing students taught IM injection skills using George and Doto's Five-Step Method perform significantly better than those taught using the SODOTO approach.

### Literature Review

The teaching of clinical skills to nursing students has evolved significantly, with various methodologies being employed to enhance learning outcomes. Two prominent approaches are George and Doto's Five-Step Method and the traditional SODOTO (See One, Do One, Teach One) approach. Both methods have been widely studied in international contexts, with emerging research exploring their applicability in Pakistan.

George and Doto's Five-Step Method emphasizes a structured, learner-centered approach. It involves demonstration, deconstruction, comprehension, performance, and feedback. This method has been praised for its systematic nature, which ensures that students not only observe but also understand the rationale behind each step (J. H. George & Doto, 2001). Studies from the United States and Europe

have shown that this method improves retention and confidence among nursing students, as it incorporates immediate feedback and reflection (Snell et al., 2021)(Vincent et al., 2022). In contrast, the traditional SODOTO approach, which focuses on observation, practice, and teaching, has been criticized for its lack of structured feedback, potentially leading to skill gaps (Wang, 2022). A study was done in India in 2022 by Swapnil Paralikar on comparison of these two model on first year MBBS students shown a significant effects on student skill retention and confidence (Paralikar et al., 2022).

In Pakistan, nursing education faces unique challenges, including limited resources and large student-to-teacher ratios. Research by Khan et al. (2022) highlights that traditional methods like SODOTO are still prevalent due to their simplicity and ease of implementation in resource-constrained settings. However, studies also indicate that Pakistani nursing students often struggle with skill retention and confidence, suggesting a need for more structured approaches like George and Doto's method (Khowaja-Punjwani, 2020). A comparative study conducted in Lahore found that students trained using the Five-Step Method performed significantly better in clinical assessments than those trained via SODOTO, particularly in complex skills such as patient assessment and medication administration (Shahzadi et al., 2017).

Despite these findings, the adoption of George and Doto's method in Pakistan remains limited due to infrastructural and training barriers. International research underscores the importance of faculty training and resource allocation for successful implementation (Parikh et al., 2024). In conclusion, while the SODOTO approach remains widely used in Pakistan due to its practicality, evidence suggests that George and Doto's Five-Step Method offers superior outcomes (J. George & Doto, 2001). Further research and investment are needed to adapt this method to the Pakistani context, ensuring better clinical skill acquisition for nursing students.

### Methodology

#### Study Design

A quasi-experimental design was used, with two groups of nursing students exposed to two different

teaching methods. This design was chosen because it allows for a comparison of two teaching methods while maintaining a controlled study environment. The study lasted two months and involved two groups of nursing students: one taught using George and Doto's Five-Step Method and the other using the SODOTO approach. The competency of both groups in intramuscular (IM) injection skills was evaluated using a standardized checklist.

#### Setting and Tool

This project was conducted in the skills lab of the Institute of Nursing Sciences at Sarhad University of Science and Information Technology (INS SUIIT). Moreover, the project was carried out using a standardized checklist adopted from INS SUIIT, which consisted of 25 steps with rationale to assess the effect of new evidence-based practice.

#### Study Population/ Sampling

The study population consists of second-year BSN students of semester 3 enrolled in a clinical skills course. The study sample was consist of 40 nursing students from institute of nursing science sarhad university of science information technology Peshawar, divided into two groups of 20 students each. The students were selected from two sections (Section A and Section B) to ensure that both groups had similar academic backgrounds and prior exposure to clinical skills. This approach minimized the risk of confounding variables and ensured that any differences in performance could be attributed to the teaching methods rather than other factors. The Inclusion Criteria was the second-year BSN students enrolled in a clinical skills lab and students with no prior formal skills training using George and Doto's or SODOTO methods while the exclusion criteria was students with prior exposure to both George and Doto's Five-step method and SODOTO approach and students who have completed similar competency-based skill assessments.

#### Project Plan

To check the current competency of nursing student regarding George and Doto's or SODOTO methods through standardized checklist adopted from INS SUIIT which consist of 25 steps with

rationales. The project was conducted over 2 months and included the following steps.

In the Preparation Phase (Week 1-2), 40 nursing students were selected and divided into two groups of 20 each. A 25-item checklist for evaluating IM injection skills was developed, and instructors were trained on the teaching methods (George and Doto's Five-Step Method and SODOTO approach) and evaluation process.

A Baseline Assessment (Week 3) was conducted to evaluate students' current competency using the checklist, ensuring they met inclusion criteria (no prior training in the methods).

Teaching Sessions (Week 4-5) involved Group A (n=20) being taught using George and Doto's method and Group B (n=20) using the SODOTO approach. Each group attended a 60-minute session in a simulated clinical environment, facilitated by trained instructors following a standardized protocol.

During the Practice Phase (Week 6), students practiced IM injection skills independently in the skills lab using provided equipment and mannequins.

The Evaluation Phase (Week 7) assessed students' performance using the checklist. Each student performed the procedure independently while being observed by an instructor, who scored their performance as "satisfactory," "needs improvement," or "unsatisfactory" without providing feedback.

Finally, in the Data Compilation and Analysis Phase (Week 8), data from the checklists were analyzed using SPSS version 23. Mean scores, standard deviations, and an independent t-test were used to compare group performance and determine statistical significance.

#### **Data Collection/ Assessment**

The data collection process in this study was carefully designed to ensure accurate, reliable, and objective measurement of nursing students' performance in intramuscular (IM) injection skills. The primary tool used for data collection was a 25-item checklist, which was developed to evaluate students' competency in performing IM injections. Each item on the checklist was rated using a three-point scale the first one is satisfactory the student performed the step correctly and confidently. The

2<sup>nd</sup> one is Needs Improvement the student performed the step but made minor errors or lacked confidence and the 3<sup>rd</sup> one was Unsatisfactory the student failed to perform the step correctly or omitted it entirely.

#### **Teaching Sessions**

Following the briefing, the students were divided into two groups Group A (n=20) Taught using George and Doto's Five-Step Method while Group B (n=20) Taught using the SODOTO approach. Each teaching session lasted approximately 60 minutes and was conducted in a simulated clinical environment. The sessions were facilitated by experienced nursing instructors who were trained in the respective teaching methods. The instructors followed a standardized protocol to ensure consistency in the delivery of the intervention. After the teaching sessions, students' performance was evaluated using the 25-item checklist.

#### **Evaluation of the Students**

The evaluation was conducted in the same simulated clinical environment where the teaching sessions took place. A mannequin was used to simulate the patient, allowing students to perform the IM injection in a controlled setting. All necessary equipment, such as syringes, needles, and medication vials, etc was provided. Each student performed the IM injection procedure independently while being observed by an instructor. The instructor used the checklist to score the student's performance in real-time, marking each item as "satisfactory," "needs improvement," or "unsatisfactory." The instructor provided no feedback or guidance during the evaluation to ensure that the scores reflected the student's independent performance. After the evaluation, the instructor recorded the scores on the checklist. To ensure consistency and objectivity in the evaluation process the instructors who conducted the evaluations were trained in using the checklist and scoring criteria. This training included practice evaluations to ensure inter-rater reliability. Students were given standardized instructions before the evaluation to ensure that they understood the task and expectations. The instructors who conducted

the evaluations were not involved in teaching the sessions, reducing the risk of bias.

### Data Analysis

Once the evaluations were completed, the data from the checklists were compiled and analyzed through SPSS version 23. The analysis involved calculating the mean scores for each group to summarize their overall performance. Using descriptive statistics (e.g., standard deviation) to understand the variability in performance within each group. Conducting an independent t-test to compare the mean scores of the two groups and

determine whether the difference was statistically significant.

### Results

Forty ( $n = 40$ ) nursing students were included in the study. They were divided into two groups, Group A = 20 and Group B = 20. Evaluating of the IM injection was taught to Group A by George and Doto's five-step method and to Group B by the traditional approach SODOTO. The mean age of the participants was **20 years**, with a minimum age of **19 years** and a maximum age of **23 years**. The mean obtained score was **19.85**, with scores ranging from a minimum of **12** to a maximum of **25**.

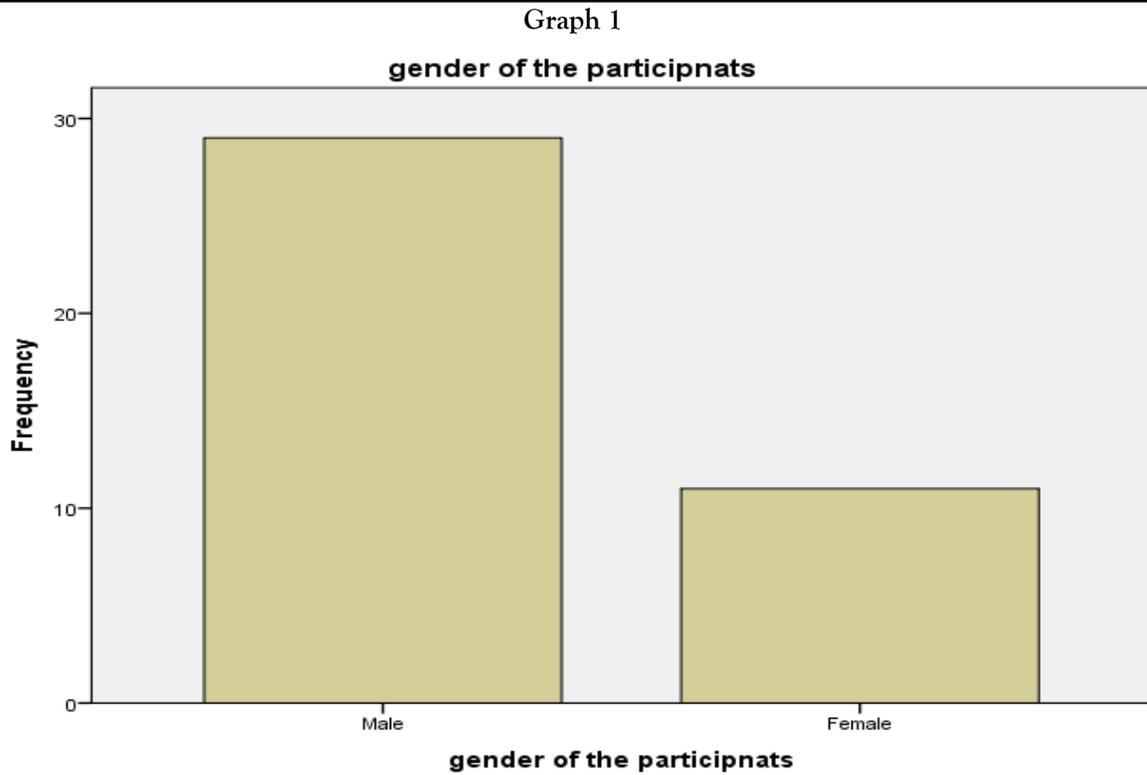
**Table 1**  
**Statistics**

	Age Distribution	Obtained Scores
N Valid	40	40
Missing	0	0
Mean	20.4250	19.8500
Std. Deviation	1.23802	3.05127
Minimum	19.00	12.00
Maximum	23.00	25.00

The gender distribution of the participants shows that 29 (72.5%) were male, while 11 (27.5%) were female. The total number of participants was 40, with males forming the majority of the sample.

**Table 2**  
**Gender of the Participants**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	29	72.5	72.5	72.5
Female	11	27.5	27.5	100.0
Total	40	100.0	100.0	



The distribution of obtained scores among the 40 participants shows variation in performance. The scores range from a minimum of 12 to a maximum of 25. The most frequently occurring scores were 21 and 22, each obtained by 6 participants (15%). Other common scores include 20 and 23, with 5

participants (12.5%) each. Lower scores, such as 12, 14, and 15, were observed in only one participant (2.5%) each. This distribution indicates that most participants scored between 16 and 25, with a steady increase in cumulative percentages.

**Table 3**  
**Obtained Scores**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 12.00	1	2.5	2.5	2.5
14.00	1	2.5	2.5	5.0
15.00	1	2.5	2.5	7.5
16.00	4	10.0	10.0	17.5
17.00	4	10.0	10.0	27.5
18.00	1	2.5	2.5	30.0
19.00	3	7.5	7.5	37.5
20.00	5	12.5	12.5	50.0
21.00	6	15.0	15.0	65.0
22.00	6	15.0	15.0	80.0
23.00	5	12.5	12.5	92.5
24.00	2	5.0	5.0	97.5

25.00	1	2.5	2.5	100.0
Total	40	100.0	100.0	

The group statistics compare the obtained scores of participants trained using the **George Doto model** and the **SODOTO method**. The **mean score** for the George Doto model group (**21.00**) is higher than that of the SODOTO group (**18.70**), indicating better performance among students trained with the George Doto model.

The **significance value (Sig. 2-tailed)** is **0.015**, indicating a statistically significant difference between the two teaching models, as it is below the conventional threshold of **0.05**. This suggests that the George Doto model had a meaningful impact on improving students' performance compared to the SODOTO approach.

**Table 4**  
**Group Statistics**

	models	N	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Obtained scores	George Doto model	20	21.0000	2.61574	.58490	.015
	SODOTO	20	18.7000	3.07964	.68863	

### Discussion

The findings of this evidence based project demonstrate a statistically significant difference in the performance of nursing students trained using George and Doto's Five-Step Method compared to those trained using the traditional SODOTO approach. The mean score for the group taught with George and Doto's method (21.00) was significantly higher than that of the SODOTO group (18.70), with a p-value of 0.015, which is below the conventional threshold of 0.05. This indicates that the structured, step-by-step approach of George and Doto's method is more effective in enhancing clinical skill competency among nursing students, particularly in performing IM injections. These results align with previous studies that have highlighted the benefits of structured teaching methods in improving skill acquisition, retention, and confidence among learners (J. H. George & Doto, 2001; Paralikar et al., 2022).

The superior performance of the George and Doto group can be attributed to the method's emphasis on systematic skill acquisition, which includes demonstration, deconstruction, comprehension, guided practice, and feedback (Kumar & Bano, 2016). This structured approach ensures that

students not only observe and perform the skill but also understand the rationale behind each step, leading to better retention and application of knowledge (Snell et al., 2000). In contrast, the SODOTO method, while effective in promoting hands-on learning, lacks the detailed breakdown of critical steps and consistent feedback mechanisms, which may result in skill gaps and inconsistent performance among students (Kargbo, 2020). The findings of this study support the argument that structured teaching methods, such as George and Doto's Five-Step Method, are more effective in addressing the variability in clinical skill competency observed among nursing students (Archer et al., 2015).

The results also highlight the importance of feedback in clinical skills training. George and Doto's method incorporates immediate and structured feedback, which has been shown to enhance skill mastery and confidence among students (Vincent et al., 2022). In contrast, the SODOTO approach often relies on peer teaching without structured feedback, which may perpetuate errors and hinder skill development (Wang, 2022). This study's findings are consistent with previous research that emphasizes the role of feedback in

improving clinical performance and reducing skill variability (Paralikar et al., 2022).

The gender distribution of the participants, with 72.5% males and 27.5% females, reflects the demographic composition of nursing students in the region. However, the study did not find any significant gender-based differences in performance, suggesting that both teaching methods were equally effective across genders. This finding is consistent with previous studies that have reported no significant gender differences in clinical skill acquisition among nursing students (Shahzadi et al., 2017).

The distribution of obtained scores further supports the effectiveness of George and Doto's method. While most participants scored between 16 and 25, the George and Doto group had a higher concentration of scores in the upper range (21-25), indicating better overall performance. In contrast, the SODOTO group had a wider distribution of scores, including more participants in the lower range (12-18). This variability in the SODOTO group underscores the limitations of the traditional approach, particularly its lack of structured feedback and step-by-

The results of this study have important implications for nursing education, particularly in the context of competency-based training. The superior performance of students taught using George and Doto's method underscores the importance of structured teaching strategies in clinical skills training. Nursing educators should consider incorporating this method into their curricula to ensure consistent skill acquisition and reduce variability in student performance. This is especially critical in resource-constrained settings, where limited access to clinical sites and faculty shortages may exacerbate skill gaps among students (Kochis et al., 2024; J. H. George & Doto, 2001).

#### Addressing Challenges in Implementation

While the Five-Step Method offers clear advantages, its implementation may face challenges, particularly in settings with limited resources or large student-to-teacher ratios. Faculty training and resource allocation are critical for the successful adoption of this method (Parikh et al., 2024). Nursing institutions must invest in faculty development

programs to ensure that instructors are proficient in delivering structured teaching methods (Vincent et al., 2022). Additionally, the use of simulation-based learning environments, as demonstrated in this study, can provide a controlled setting for skill practice and evaluation, mitigating some of the challenges associated with limited clinical sites (Blanié et al., 2020).

#### Limitations of the Study

This study has several limitations that should be acknowledged. First, the sample size was relatively small (n=40), which may limit the generalizability of the findings. Future studies with larger and more diverse samples are needed to validate these results. Second, the study was conducted in a simulated environment, which may not fully replicate the complexities of real-world clinical settings. While simulation is a valuable tool for skill acquisition, its impact on long-term skill retention and transferability to clinical practice warrants further investigation. Finally, the study focused on a single clinical skill (IM injection), and the findings may not be applicable to other skills or procedures.

#### Recommendations for Future

Future research should explore the long-term impact of George and Doto's Five-Step Method on skill retention and clinical performance in real-world settings. Comparative studies involving multiple clinical skills and diverse student populations would provide a more comprehensive understanding of the method's effectiveness. Additionally, qualitative studies could explore students' perceptions and experiences with structured teaching methods, offering insights into their confidence, satisfaction, and learning preferences.

#### Conclusion

In conclusion, this study demonstrates that George and Doto's Five-Step Method is more effective than the traditional SODOTO approach in teaching IM injection skills to nursing students. The structured nature of the Five-Step Method, combined with its emphasis on feedback and guided practice, enhances skill acquisition, retention, and confidence. These findings support the adoption of

structured teaching strategies in nursing education to address competency gaps and improve patient care outcomes. Nursing educators and institutions should prioritize faculty training and resource allocation to facilitate the successful implementation of evidence-based teaching methods like George and Doto's approach.

## REFERENCES

- Archer, E., Van Hoving, D. J., & De Villiers, A. (2015). In search of an effective teaching approach for skill acquisition and retention: Teaching manual defibrillation to junior medical students. *African Journal of Emergency Medicine*, 5(2), 54-59. <https://doi.org/10.1016/j.afjem.2014.10.009>
- Blanié, A., Amorim, M.-A., & Benhamou, D. (2020). Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students. *BMC Medical Education*, 20, 1-11.
- Brink, D., Power, D., & Leppink, E. (2020). Results of a preceptor improvement project. *Family Medicine*, 52(9), 647-652.
- Chicca, J., & Shellenbarger, T. (2020). Implementing successful clinical nursing preceptorships. *Nurse Educator*, 45(4), E41-E42.
- George, J., & Doto, F. (2001). A simple five-step method for teaching clinical skills. *Family Medicine*, 33, 577-578.
- George, J. H., & Doto, F. X. (2001). For the Office-based Teacher of Family Medicine A Simple Five-step Method for Teaching Clinical Skills. *Family Medicine*, 33(8), 577-578.
- Hepburn, S.-J., Fatema, S. R., Jones, R., Rice, K., Usher, K., & Williams, J. (2024). Preparedness for practice, competency and skill development and learning in rural and remote clinical placements: A scoping review of the perspective and experience of health students. *Advances in Health Sciences Education*, 1-38.
- Kargbo, S. K. (2020). An Assessment of the Knowledge, Attitudes, and Practices Pre-and Post-'SODOTO' Model of Intervention in the Mobile Teaching Kitchen.
- Khowaja-Punjwani, S. (2020). Nursing in Pakistan: issues and challenges. *Eubios Journal of Asian & International Bioethics*, 30(5).
- Kim, J. Y., & Ahn, H. Y. (2019). The effects of the 5-step method for infant cardiopulmonary resuscitation training on nursing Students' knowledge, attitude, and performance ability. *Child Health Nursing Research*, 25(1), 17.
- Kochis, M., Phitayakorn, R., Awad, M. M., & Paranjape, C. (2024). A framework to improve variability in continuing professional education: stepwise teaching and evaluation for practicing surgeons (FIVE-STEPS). *Global Surgical Education - Journal of the Association for Surgical Education*, 3(1), 1-9. <https://doi.org/10.1007/s44186-024-00293-y>
- Kumar, S., & Bano, S. (2016). Organizational Analysis of Government Nursing Educational Organization of Karachi, Pakistan. *International Journal of Science and Research (IJSR) ISSN*, September, 2319-7064. <https://doi.org/10.21275/ART20161516>
- Pandey, S. B., Patel, B. N., Chourasia, R. S., & Kumar, R. (2024). A Comparative Study of Traditional vs. Modern Anatomy Teaching Methods on Student Knowledge Retention. *Azerbaijan Pharmaceutical and Pharmacotherapy Journal*, 23, 193-199.
- Paralikar, S., Shah, C., Kapoor, A., & Parmar, U. (2022). A quasi-experimental study to compare the acquisition of basic clinical skills in novice medical students taught by George and Doto's five-step method compared to those taught by the traditional approach (SODOTO). *Indian Journal of Physiology and Pharmacology*, 61(1), 75-80. [https://doi.org/10.25259/IJPP\\_136\\_2020](https://doi.org/10.25259/IJPP_136_2020)

- Parikh, C. D., Chaudhari, J. S., & Solanki, V. G. (2024). *Effectiveness of George & Doto 's Five-Step Method Compared to Conventional Approach for Teaching Intravenous Injection Skill to Undergraduate Medical Students*. 16(9), 707-712.
- Pérez-Perdomo, A., & Zabalegui, A. (2023). Teaching strategies for developing clinical reasoning skills in nursing students: A systematic review of randomised controlled trials. *Healthcare*, 12(1), 90.
- Shahzadi, C., Kousar, R., Hussain, M., Waqas, A., Gilani, S. A., & Safdar, M. (2017). The assessment of gap between theory and training classes in nursing education system: a case of University of Lahore, Pakistan. *Saudi Journal of Medical and Pharmaceutical Sciences*, 3(8), 896-906.
- SIRSIKAR, M. N., MOHANTY, S., & MURTHUZA, A. G. A. A. (2024). Perception of First-year Medical Students' Regarding Five Microskills of the One-minute Preceptor Model in Early Clinical Exposure: A Quasi-experimental Study. *Journal of Clinical & Diagnostic Research*, 18(9).
- Snell, L., Tallett, S., Haist, S., Hays, R., Norcini, J., Prince, K., Rothman, A., & Rowe, R. (2000). A review of the evaluation of clinical teaching: new perspectives and challenges. *Medical Education*, 34(10), 862-870.
- Vincent, S. C., Arulappan, J., Amirtharaj, A., Matua, G. A., & Al Hashmi, I. (2022). Objective structured clinical examination vs traditional clinical examination to evaluate students' clinical competence: A systematic review of nursing faculty and students' perceptions and experiences. *Nurse Education Today*, 108, 105170.
- Wang, Y. (2022). A Comparative Study on the Effectiveness of Traditional and Modern Teaching Methods. *Proceedings of the 2022 5th International Conference on Humanities Education and Social Sciences (ICHESS 2022)*, 270-277. [https://doi.org/10.2991/978-2-494069-89-3\\_32](https://doi.org/10.2991/978-2-494069-89-3_32)

