DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS) VERSUS TRADITIONAL ASSESSMENT METHOD FOR NASOGASTRIC TUBE INSERTION SKILL
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ABSTRACT

BACKGROUND
The mantra of a good medical teaching-learning process is "Assessment Drives Learning." At present many practical bedside skills of medical students (interns) are taken for granted and assessed in a cursory traditional way. By using DOPS- Direct Observation of Procedural Skills as a method of assessment, the proficiency and competency of interns in bedside procedures can be graded and this will help them to become more perfect and confident in performing the skill. The present study has been conducted to compare the traditional assessment method with Direct Observation of Procedural Skills (DOPS) to assess the skill of medical interns in insertion of a nasogastric tube.

The objectives of this study were- to assess interns’ skill in insertion of a nasogastric tube by the traditional assessment method and also by a series of Direct Observation of Procedural Skills (DOPS) method and 2. to identify the more effective method of assessment.

MATERIALS AND METHODS
40 interns posted in the department of Internal Medicine, KIMS, Hubballi, were assessed by while performing the procedure of insertion of a nasogastric tube in the emergency ward (casualty) by the two methods of assessment, over a period of three months.

RESULTS
Interns assessed by the traditional method had a wide range of scores, whereas interns assessed by the Direct Observation of Procedural Skills (DOPS) method showed a consistent improvement in the serial assessments.

CONCLUSION
Direct Observation of Procedural Skills (DOPS) is a very effective method to assess all the domains of learning including cognitive, affective and psychomotor skills of interns while performing a bedside procedure and is a better method compared to the traditional method as it gives a feedback to the performers to help to improve at all levels of the skill, which is substantiated by statistical analysis.

KEYWORDS
Direct Observation of Procedural Skills (DOPS), Traditional Assessment Method.

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BACKGROUND
In medical college hospitals in India, interns who are posted to emergency wards/casualty are expected to perform routine procedures like insertion of nasogastric tube in a large group of patients who are admitted with poisoning, drug overdose, coma due to stroke etc.

Thought patient care is taught in bedside teaching as an integral and essential part of the teaching methodology for medical students in the department of Internal Medicine, an age-old protocol based on the clinical textbooks is followed. The students are taught how to take a thorough history and examine the patients systematically and systematically. Case-discussions are conducted by the teachers and the theoretical and bedside knowledge of the students is assessed and honed. Therapeutic aspect of the patient care is limited to a short oral discussion on what investigations and procedures need to be done and what treatment needs to be implemented. The students hardly get to observe the procedures of investigation and treatment. When these students begin internship, they are suddenly expected to know these procedures and are forced to learn the methods by trial and error under the guidance of post-
graduate students. Also, the skills of the intern are taken for granted and not systematically assessed.

By reinforcing the skill in them by using a four-step technique and using DOPS (Direct Observation of Procedural skills) method to assess the intern, the proficiency and competency of the intern can be graded and will help them to become more competent and confident.

Many changes are being implemented by the Medical Council of India with a view to update and improve teaching—learning methods for medical students. An integral part of this process is to inculcate and include newer and better assessment/examination methods which help to achieve the long term goals in a more effective way.

MATERIALS AND METHODS
40 interns posted in the department of Internal Medicine, KIMS, Hubballi were assessed by while performing the procedure of insertion of a nasogastric tube in the emergency ward (casualty) by the two methods of assessment over a period of three months.

The participants were given a pre-evaluation questionnaire and 20 interns were directly assessed by the traditional assessment method while performing the procedure. The procedure technique of inserting the nasogastric tube was reinforced to the other group of 20 interns using a four-step method of demonstration, deconstruction, comprehension and execution. The procedure was first demonstrated to them as a continuous process; then it was broken down into individual steps and described; in the third step, the participant enumerated the steps as the demonstrator performed them and lastly, the participants independently performed the procedure. These participants were familiarized with the DOPS form of assessment and with its checklist, which included all the steps right from taking a proper consent, using proper aseptic measures, up to post-procedure management, including patient reassurances and confirming the success of the procedure. They were then serially assessed using DOPS on three different occasions by three different assessors. Both the group of participants were then given a detailed feedback by the assessors and also a post-evaluation questionnaire.

Chi-square test was used as test of significance for data. Independent t-test was used as test of significance to identify the mean difference between two variables.

RESULTS
The first (traditional method) group of participants performed the procedure silently as they had learnt it on their own by observing their peers and seniors. These interns assessed by the traditional method had a wide range of scores, as they were not aware of performing the procedure in a systematic and step-wise way and also because they had no specific checklist to grade them, their scores were the discretion of the assessor with a lot of chance for bias in marking.

Since the other group (DOPS method) of participants had undergone reinforcement with a four-step technique and had been familiarized with the checklist in the Direct Observation of Procedural Skills (DOPS) format of assessment, they were more systematic in doing the procedure. Moreover, since they received a constructive feedback post-procedure, as a part of the DOPS method, they could consistently improve on their skill and achieve better perfection in subsequent assessments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Method</td>
<td>5 – 8</td>
<td>--</td>
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<tr>
<td>DOPS</td>
<td>5 – 14</td>
<td>15 – 24</td>
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</tbody>
</table>

*Table 1. Scores on Evaluation of The Procedure*

The p value (of <0.0001) was considered as statistically significant after assuming all the rules of statistical tests.

The first group of participants showed no changes in their pre-test and post-test self-evaluation questionnaires and were unsure about the competency of their skill. The second (DOPS) group of participants showed a significant improvement in their post-evaluation questionnaire. The observation was that assessment by DOPS not only improved their skill, but also built up their confidence and competency.

**DISCUSSION**

Learning is a continuous and life long process. Especially a medical graduate needs to be as perfect and confident as possible in performing regular medical procedures. The present Indian medical curriculum has very little scope tech bedside procedures in real-time situations. Moreover, as Assessment drives learning, there is a need for constructive and systematic assessment of all bedside skills, so that, they can be perfected with an effective feedback after the assessment.

In the DOPS method of assessment, there is a direct observation of the performance which makes a difference in a systematic way, which is lacking in the traditional and age-old methods of assessment. Also, since the one-year period of internship is a part of the learning process, this is the time...
Direct Observation of Procedural Skills (DOPS) is a very effective method to assess all the domains of learning including cognitive, affective and psychomotor skills of interns while performing a bedside procedure and is a better method compared to the traditional method as it gives a feedback to the performers to help the improve at all levels of the skill, which is substantiated by statistical analysis. Direct Observation of Procedural Skills (DOPS) is an ideal assessment tool to evaluate and improve the bedside procedural skills of interns and it needs to be incorporated in the curriculum. The Medical Council of India has already established its Vision and has implemented great changes in the process of training medical students in India. The aim is to make each student achieve adequate knowledge and skills to be at par with any medical graduate anywhere in the world. From 2019 competency-based medical education is already set to become a reality with multiple alterations and improvements to be inculcated into the Indian Medical curriculum. This study reinforces the fact that by including assessment methods like DOPS in the curriculum, the competency of the Indian Medical Graduates can definitely be taking a positive step forward.
## DOPS FORM FOR NASOGASTRIC TUBE INSERTION SKILL

<table>
<thead>
<tr>
<th>Domain &amp; Comments</th>
<th>Satisfactory</th>
<th>Needs Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Approach (to include communication, consent and consideration of the patient.)</td>
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<tr>
<td>Knowledge (Indication, anatomy, technique)</td>
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<tr>
<td>Demonstrate appropriate preparation pre-procedure</td>
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<td>Appropriate analgesia or sedation</td>
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<tr>
<td>Technical Ability</td>
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<tr>
<td>Aseptic Technique</td>
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<tr>
<td>Post Procedure Management</td>
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</tbody>
</table>

**GRADES (1 TO 5)**
1: very poor, 2: poor, 3: average, 4: good, 5: very good

**Total score =**

<table>
<thead>
<tr>
<th>Overall Ability to perform Procedure</th>
<th>Competent to perform unsupervised</th>
<th>May need supervision if complications arise</th>
<th>Needs more practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments:</td>
<td></td>
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</table>

**Assessor’s position:**
- Consultant ☐  
- Resident ☐

**Time taken for Feedback & Observation (in minutes):**

**Assessors Signature:**
REFERENCES


