Development of Patient-Oriented Participatory Clinical Clerkship
- Individual Patient Management and Innovatory Evaluation Scale -

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Department of Clinical Pharmacy, Showa University School of Pharmacy
Department of Pharmacy Services, Showa University Hospital

Key words

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Introduction

The introduction of a patient-oriented participatory clinical clerkship is necessary to align with the future needs of the healthcare system and to prepare students for the practical, hands-on aspects of patient care. This approach is critical because it emphasizes the active participation of the patient in their own healthcare decisions and management, fostering a more patient-centric approach to care. The participatory model allows students to engage in real-world scenarios, thereby bridging the gap between theoretical knowledge and practical application.

The development of this clinical clerkship aims to enhance students' understanding of patient-centered care, improve communication skills, and foster the development of critical thinking abilities. It involves the integration of pharmacist-led patient management with innovative evaluation techniques, ensuring that students are well-equipped to handle complex patient cases.

Innovations in the evaluation scale contribute to a more comprehensive assessment of students' performance in patient management. This approach recognizes the dynamic nature of patient care and the need for continuous improvement in both student performance and educational strategies.

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Materials and Methods

1. **Grouping of University Hospitals**

   The purpose of this grouping is to categorize and organize the participating universities in a manner that facilitates the implementation of a cohesive and structured hospital clerkship program. This process involves several steps, including the identification of key criteria for grouping, the evaluation of each university's capacity to meet these criteria, and the establishment of clear guidelines for participation. The grouping process is designed to ensure that each university is adequately prepared to deliver a high-quality clerkship experience, while also providing a framework for the development of a comprehensive hospital clerkship program.

2. **Formulation of the Hospital Clerkship Developing Working Group**

   This working group is tasked with the development of a comprehensive and evidence-based hospital clerkship program. The group consists of stakeholders from various sectors, including the academic, healthcare, and government sectors. The formulation of the clerkship program involves several key steps, including the identification of learning objectives, the development of a curriculum, and the establishment of assessment criteria. The working group will also oversee the implementation of the clerkship program, ensuring that it meets the needs of both students and healthcare professionals.

3. **Creating SBOs for the patient oriented participatory clerkship**

   The creation of specific learning outcomes (SBOs) is a crucial step in the development of a patient-oriented participatory clerkship program. These SBOs serve as a roadmap for both students and healthcare professionals, guiding the development of a curriculum that is aligned with the needs of patients. The SBOs are developed collaboratively with stakeholders, including patients, healthcare professionals, and educational experts. This collaborative approach ensures that the SBOs are relevant and reflective of the needs of the community.

4. **Practice of the patient oriented participatory clerkship**

   The practice of the patient-oriented participatory clerkship involves the implementation of the SBOs in a real-world setting. This practice is facilitated through the establishment of partnerships with healthcare institutions, where students are provided with opportunities to apply their knowledge and skills in a clinical setting. The practice phase also involves ongoing feedback and evaluation, allowing for continuous improvement and refinement of the clerkship program.

5. **Creating and developing keywords and evaluation scale for formative assessment**

   The creation of keywords and an evaluation scale is essential for the formative assessment of the clerkship program. These tools are designed to facilitate the continuous monitoring of student performance and the identification of areas for improvement. The keywords and evaluation scale are developed collaboratively with stakeholders, including students, healthcare professionals, and educational experts. This collaborative approach ensures that the assessment tools are relevant and reflective of the needs of the community.
### Table 1

<table>
<thead>
<tr>
<th>Section</th>
<th>Keywords for evaluation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overview</td>
<td>List of keywords related to communication and privacy</td>
<td>4</td>
</tr>
<tr>
<td>2. Communication with Patients</td>
<td>List of keywords related to patient education and privacy</td>
<td>3</td>
</tr>
<tr>
<td>3. Patient Information</td>
<td>List of keywords related to patient information and privacy</td>
<td>2</td>
</tr>
<tr>
<td>4. Privacy Policy</td>
<td>List of keywords related to privacy policy and code of ethics</td>
<td>1</td>
</tr>
</tbody>
</table>

**Fig. 1. A**

**Fig. 1. B**

**Table 1 – Table 1**
Fig. 2. A 1 A 2

Fig. 3. A

Fig. 4

Fig. 5

Fig. 1
Fig 2. The Clerkship was "Participatory" not didactic or observational

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1)</td>
<td>14.5%</td>
<td>64.5%</td>
</tr>
<tr>
<td>No</td>
<td>20.9%</td>
<td></td>
</tr>
</tbody>
</table>

The Clerkship was "Patient oriented"

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>Not Sure</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2)</td>
<td>17.7%</td>
<td>69.9%</td>
</tr>
<tr>
<td>No</td>
<td>12.4%</td>
<td></td>
</tr>
</tbody>
</table>

Fig 3. A) Did you enjoy or repletion to the clerkship?

- Yes: 30%
- No: 7%
- Not sure (Don't know): 35%
- Rather felt difficulties and/or pain: 13%
- No response: 15%

B-1) Were you able to instruct the students enough?

- No response: 12%
- Yes: 61%

B-2) Reason for the answer "No" (Multiple answers allowed, number of person)

- No enough time (unknown reason): 12
- No enough time (too busy with the routine services): 10
- SBOs were not appropriate: 4
- Too many SBOs: 9
- Lack of my ability to instruct: 6
- Lack of student's motivation: 4
- Others: 8
2. Evaluation of student's learning: Analysis of the grading sheet

<table>
<thead>
<tr>
<th>Preceptor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Preceptor</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fig 4**

A) Were the keywords and evaluation scale useful?

- No: 13%
- Yes: 79%

**Fig 5**

B) Reason for the answer "No" (Multiple answers allowed, number of person)

- Evaluated by my own way (not referred at all): 3
- Referred once but difficult to understand: 1
- Was not able to understand the scale: 2
- The scale was not match with SBCs: 4
Table 2. Differences between preceptors and students in performance evaluation of SBOs

<table>
<thead>
<tr>
<th>SBO Group (number of SBOs included)</th>
<th>Evaluator</th>
<th>mean ± SD</th>
<th>P value</th>
<th>Average rate of executed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Overview (8)</td>
<td>Preceptor</td>
<td>3.7 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>84.5%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.3 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Preparation and distribution of oral and external drugs (21)</td>
<td>Preceptor</td>
<td>3.4 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>93.5%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.2 ± 0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Preparation and distribution of parenteral drugs (7)</td>
<td>Preceptor</td>
<td>3.4 ± 0.6</td>
<td>*P&lt;0.05</td>
<td>93.4%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.2 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Miscellaneous drug compounding (8)</td>
<td>Preceptor</td>
<td>3.6 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>90.3%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.4 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Risk management (6)</td>
<td>Preceptor</td>
<td>3.5 ± 0.6</td>
<td>*P&lt;0.05</td>
<td>85.4%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.2 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Inventory management (6)</td>
<td>Preceptor</td>
<td>3.7 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>95.6%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.3 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Clinical trial (6)</td>
<td>Preceptor</td>
<td>3.5 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>64.2%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.1 ± 0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Drug information (5)</td>
<td>Preceptor</td>
<td>3.4 ± 0.5</td>
<td>*P&lt;0.05</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.2 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Patient management and physician consulting (22)</td>
<td>Preceptor</td>
<td>3.5 ± 0.6</td>
<td>*P&lt;0.05</td>
<td>93.2%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>3.2 ± 0.6</td>
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<td></td>
</tr>
</tbody>
</table>

*The differences between preceptor and student were statistically significant (Student’s t-test).

Discussion

The differences in the performance evaluation of SBOs between preceptors and students indicate the need for further investigation into the teaching methods and assessment strategies employed. Preceptors tended to score SBOs higher, potentially due to their experience and insight into the practical aspects of pharmaceuticals, which students may not have fully grasped. On the other hand, students showed more variability in scores, suggesting a need for more structured guidance and feedback. The results also highlight the importance of a collaborative environment where both preceptors and students can learn from each other. Further research could explore the factors contributing to these differences and develop strategies to ensure a consistent and fair evaluation process.