Web-based Simulation as a Component of Continuing Medical Education: Data from the CSAT Project

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What is CSAT?
Computer Simulation Assessment Tool
What is CSAT?

Data Per User:

- Errors of commission and omission
- Order choice
- Time management
- Virtual medical-chart note
- Demographics

Aggregate Data:

- Error patterns
- Most commonly selected items by order
- Average time spent
- Connections between demographics and performance
What is CSAT?

Non-US Registrants by Country

Total Non-US Countries: 23

US Registrants by State

Total US States: 45

N = 358
What is CSAT?

Degree

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<tr>
<th>Degree</th>
<th>Percentage</th>
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<tr>
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<tr>
<td>APRN</td>
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<tr>
<td>RN</td>
<td>4.13%</td>
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<tr>
<td>MEA</td>
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N = 247

Average # Patients Seen Weekly

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<th>Patient Impact</th>
<th>Percentage</th>
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<tr>
<td>0.24 or less</td>
<td>20.35%</td>
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<tr>
<td>0.25-0.49</td>
<td>17.32%</td>
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<td>0.50-0.99</td>
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<td>2.00+</td>
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Est. Patient Impact: 20,839 per Week
CSAT: Theoretical Design Elements
CSAT:
As an Educational Intervention
CSAT: Education Intervention

- Personalized
- Engaging
- Web-based
- Interactive
- Asynchronous
I did NOT need to learn a lot of things before I could get going with this system
I felt very confident using the system
I did NOT find the system very cumbersome to use
I imagine that most people would learn to use this system very quickly
I did NOT think there was too much inconsistency in this system
I found the various functions in this system were well integrated
I do NOT think that I would need the support of a technical person to use this system
I thought the system was easy to use
I did NOT find the system unnecessarily complex
I would like to use this system frequently

System Usability Scale Score

Range: 0 "Low Usability" to 4 "High Usability"

Total Score

SUS Score

Item Score
CSAT: As Performance Assessment
CSAT: Performance Assessment

Moore’s Model

- Level 1: Participation
- Level 2: Satisfaction
- Level 3a: Declarative Knowledge
- Level 3b: Procedural Knowledge
- Level 4: Competence
- Level 5: Performance
- Level 6: Patient Health

Simulation
Live Lecture
User Interface

Part II: Review Elements From Today's Appointment

Below is a list of all possible decisions available in this scenario. They are grouped by basic domains of assessment, referral, and intervention. Each item is labeled "required" "advised" or "not advised" based on published literature. Items are also listed as "selected" or "not selected" based on your actions.

- Your action is in line with published guidelines
- You may wish to reconsider your action
- Your action is not in agreement with published guidelines

Assess Symptoms

- Appetite: Required, Selected
- Changes in Interests: Required, Selected
- Concentration: Required, Selected
- Depression Level: Required, Selected
- Energy and Fatigue: Required, Selected
- Guilt: Required, Selected
- Psychomotor Changes: Required, Selected
- Sleep: Required, Selected
- Suicidal Ideation: Required, Not Selected

Assess Illness Beliefs

- Ask: Do you use illicit substances? Advised, Selected
- Ask: Have you been hospitalized? Advised, Selected
- Ask: What are the problems that it has caused you? Required

Part III: Remediation of Required Elements that You Did Not Select

Below, you will find additional information about assessing depression and a discussion of culturally sensitive elements necessary to provide optimal care for this patient.

1. Suicidal Ideation
   One of the symptoms in the DSM-V diagnostic criteria of major depressive disorder.

2. Ask: What has caused it?
   This is one of the important questions to explore patients illness beliefs.
   For more information, please see Patients and healers in the context of culture: An Exploration of the Borderline between Anthropology, Medicine, and Psychiatry by Arthur Kleinman, MD.

3. Ask: Why do you think it started?
   This is one of the important questions to explore patients illness beliefs.
   For more information, please see Patients and healers in the context of culture: An Exploration of the Borderline between Anthropology, Medicine, and Psychiatry by Arthur Kleinman, MD.

4. Ask: What does it do to you?
   This is one of the important questions to explore patients illness beliefs.
   For more information, please see Patients and healers in the context of culture: An Exploration of the Borderline between Anthropology, Medicine, and Psychiatry by Arthur Kleinman, MD.

5. Determine if patient is willing to take medication
   It is important to explore patients preferences in discussing treatment options.
   For more information, see Ethical considerations in the delivering psychiatric diagnosis by Young & Kam.

6. Explore resistance to medication
   It is important to explore whether patient has reservations in taking medications for treatment of depression.
   For more information, see Ethical considerations in the delivering psychiatric diagnosis by Young & Kam.
### Teacher Interface

**Scenario Number:** 7  
*Bold = required; 999 = not selected*

#### IDs Link to User Demographics

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**Drop-Down Menu Options**

**Actions Separated by User**

**Action Selection and Order**
CSAT: As a Gap Analysis
Assessing Suicidality in Patient with Depression

**Introductory Information:** 23 y/o female. You started treating with fluoxetine for depression four weeks ago. Presenting for follow-up.

**Revealed During Simulation:** Patient is non-compliant with medication. Shows symptoms indicative of bipolar disorder.
Assessing Suicidality in Patient with Depression

CSAT: Gap Analysis

- Asked: 77%
- Did Not Ask: 23%

Graph showing the distribution of asked and did not ask with N = 90.

49.3%
Treatment of Bipolar Depression

Add Quetiapine

- Did not choose
- Did choose

\[ x^2 = 24.41, p < .01 \]
CSAT: Future Directions
Iterative Learning Model in Simulation
QUESTIONS?

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Anan Nathif
Rose Desilets
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