Facilitators Guide: The “Three D’s” Card-Sorting Exercise

Developed by:
Miguel Paniagua, MD

Consulting contributors:
Maria H. van Zuilen, Ph.D., Roland J. Pua, M.D., Michael J. Mintzer, M.D., Ivan Silver, M.D.

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Resource Description
The “Three D’s” Card Sorting Exercise is a 30-45 minute interactive small group activity primarily designed to assess medical learners’ ability to distinguish between aspects of dementia, depression, and delirium. Each learner is given a set of cards with symptoms, diagnostic tools, or other terms related to one or more of these geriatric syndromes, and asked to place them in one of the syndrome categories. As a group, learners discuss their rationale and the available evidence base for placing cards in a certain category. Much of the group discussion typically centers on areas where these diagnostic entities overlap and those elements about which there is uncertainty and/or controversy. This educational modality is also an excellent teaching tool and it promotes peer teaching and self-directed learning. The facilitator is present to encourage discussion among the participants and to correct any misconceptions that may be voiced.

Learning objectives
1. The learner will distinguish between aspects of dementia, depression, and delirium (by sorting cards with descriptive terms and phrases into the “best fit” diagnostic category).
2. The learner will explain the rationale for placing cards into a diagnostic category.

Intended Audience
This interactive gaming activity is intended for third or fourth year medical students, physician assistant or nurse practitioner students, and primary care or psychiatry interns. This activity is not intended for those who already have extensive knowledge and experience in the assessment and management of cognitive impairment in older adults. The ideal number of participants is between 3 to 8 people.

Prerequisites
Before participating in this activity, the learner should have completed at least one family medicine, internal medicine, geriatrics or psychiatry clerkship/rotation. The learner should have basic knowledge of the definitions of delirium, dementia, and depression and their respective presentations clinically.

Instructor qualifications and responsibilities
The instructor should be at senior resident, fellow or attending level in a primary care specialty or psychiatry, or equivalent in nursing or physician assistant training. Some experience in small-group facilitation would be beneficial. Previous experience with these syndromes in a clinical setting is recommended.

Required Resources
You will require a room that can comfortably fit all participants and the facilitator (up to 10 people). A large square or rectangular table or tables that in total are at least 15 feet in length (approximately 4.5 meters) to accommodate up to 15 to 20 cards (4.25 x 7 inches or 10.5 x 18 cm) in each column. No chairs are necessary, as you want the participants to be standing, walking, and interacting with each other and the material. The game cards and table tents should be printed on heavy stock paper or cardboard or on paper that can be laminated (see appendix).

Procedures for Implementation
There are 4 categories-- Dementia, Delirium, Depression and a “?” category printed on large cards (see PDF attachment), which should be folded in two into tents, and placed on the table in a row at one end. Be certain to provide enough space in each column on the table to easily display the cards placed there by the participants (see diagram). Similarly, leave enough room on all sides for participants to pass easily around the table. There are multiple key
characteristics for each of the three categories. These are present on the cards and randomly assigned in relatively equal stacks to each participant.

- First, introduce the group to the format and objectives of the session (5 minutes). Explain that this is an opportunity to physically interact with the concept of cognitive impairment. They will have approximately 15-30 minutes to sort their cards into the “best fit” column.

- Give an equal pile of cards to each member of a small group of learners. Each participant must then sort their cards into the appropriate category of dementia, delirium or depression (or a “?” category if the group collectively cannot decide).

- Ask the participants to think aloud as they are sorting the cards. Explain that many of the items may fit in more than one column, but they should reason out loud to each other why they are putting their cards where they have chosen.

- Each card has a characteristic written on it that may more accurately describe one of the categories than the others. Or that may fit equally well in more than one category.

- Some cards will invoke some controversy in category placement thereby prompting discussion and intra-participant teaching. Thus, the participants have a chance not only to associate cards with categories but to learn from one another and teach one another with facilitator observation.

- Encourage them to challenge each other on the category placement of each card. The facilitator should be non-directive in his facilitation, only to be used as a resource for technical issues at this point. The facilitator may take notes during the session of the errors, omissions and controversies in the participants’ discussion.

- After the students have gone as far as they can, the facilitator then gives the group feedback starting with the group’s correct responses, then addressing the errors and omissions and associated explanations. The facilitator may use the evidence and expert rating guide (separate file) to guide the feedback session.

- Facilitator observation of the student reasoning and group process and is paramount in achieving the stated objectives, thereby facilitating formative feedback during the activity.
**Evaluation**

Evaluation of this activity has been ongoing at the University of Miami Miller School of Medicine (UMMSM) Geriatrics II rotation (See Appendix A). In the past year, 72 fourth-year students at UMMSM participated in this activity. On a 5 point Likert scale (1 = strongly disagree and 5 = strongly agree), the majority of the student participants felt the objectives of the card sorting session were clearly specified (4.3), understood the activity (4.3) and were able to participate actively (4.4). In a self-reported pre- and post-activity survey, the majority of participants felt their ability to distinguish between dementia, delirium and depression was improved after this activity compared to prior (3.7 to 4.5). Furthermore, the majority felt their ability to distinguish between the tools to screen or diagnose dementia, delirium and depression was improved after this activity compared to prior (3.6 to 4.3).

**Expert ratings of card items**

A panel of faculty in geriatric psychiatry and medicine were asked to rate each card item (using a 0-3-point scale) on how well it applied to dementia, delirium, and depression. Some examples are displayed in figure above. As expected, experts rated many of the card items having some degree of applicability to more than one of these syndromes. These data will help facilitators in the group discussion by reassuring the students that even the "experts" could come to no consensus on most items.

**Competency Assessment**

After completing the activity, a cohort of students (N=26) were given six case scenarios and asked to determine whether the patients had dementia, delirium, or depression. The assessment was also given to a comparison group of medical students (N=19) who completed the first geriatrics clerkship but who had not yet participated in the card-sorting activity. Students who completed the activity answered significantly more items correctly than students who did not (mean = 5.88 vs. 5.36; t = 2.703, p = 0.013, non-equal variances).

**Relationship to Other Materials**

This activity could be used as a “stand alone” activity or complement a traditional teaching session on cognitive impairment in the elderly as an applied knowledge activity. This could also be used in conjunction with an online tutorial or module that covers dementia, delirium and depression in the elderly.
Extension Activities
If there are 10 or more participants, consider using two simultaneous games, essentially doubling the set up described. It would be useful (though not required) to then have additional facilitators to debrief the activity. Furthermore, if more than one game is running at once, the facilitator may choose to then utilize the participants in the debriefing as follows:

- Have half of each participating group switch tables with another group
- Ask the “consultant” group of participants to critique the card placement of the original group, and suggest changes (if indicated) and explain their rationale
- After “consultant” group has competed their critique, then debrief the activity as previously described

Lessons Learned
Since the intention of the game is to mirror the ambiguous presentations of cognitive impairment in the elderly, many of the items were meant to be applicable to two or more categories. This then would obligate the participants to reason out loud their choices to the group. This caused much concern in the development team especially when discussion of assessment was introduced. Therefore, the items have been revised from previous versions for clarity and to avoid redundancy.

List of References (utilized in creation of game)

References used in Developing this Guide

Citation
Appendix A - Evaluation Form
Card Sorting Activity

Facilitator: ______________________

Participant: ___ Medical Student (MS-___) ___ Resident (Level/Specialty)___________
__ Other (Specify)________________

Please rate the following:
The objectives of the session were clearly specified

Strongly Agree 1 2 3 4 5 Strongly Disagree

I understood what I was supposed to do during the activity (i.e., the rules of the game were clearly specified).

Strongly Agree 1 2 3 4 5 Strongly Disagree

I was able to participate when I wanted to.

Strongly Agree 1 2 3 4 5 Strongly Disagree

Please indicate how well the learning objectives for the session were met:
Distinguish between aspects of dementia, depression, and delirium (by sorting cards with descriptive terms and phrases into the "best fit" diagnostic category).

Strongly Agree 1 2 3 4 5 Strongly Disagree

Explain the rationale for placing cards into a diagnostic category.

Strongly Agree 1 2 3 4 5 Strongly Disagree

How was the length of the session?
The length of the session was (check one): ____too long ____about right ____too short

How was the length of the session?
The length of the session was (check one): ____too long ____about right ____too short

Please rate yourself on the following items: (1) retrospectively as you were before participating in this exercise, and (2) as you are currently.

<table>
<thead>
<tr>
<th>Ability to distinguish between aspects of dementia, depression, and delirium</th>
<th>Before</th>
<th>Currently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

I learned something new in this session that I can use in my daily practice.

Strongly Agree 1 2 3 4 5 Strongly Disagree

Comments (How can we improve this session?)
Appendix B - Peer Feedback Form
The “three D’s” of Cognitive Impairment: An interactive card-sorting exercise

Number of participants: ______________

Participants (check all that apply): ___ Medical Students MS-______________________
___ Residents (Level/Specialty)______________________
___ Other (Specify) _______________________

Please rate the following:
The objectives of the activity were clearly specified
Strongly Agree 1 2 3 4 5 Strongly Disagree

The instructions on how to facilitate the activity were clearly specified.
Strongly Agree 1 2 3 4 5 Strongly Disagree

Please indicate, in your opinion, how well the learning objectives for your session were met:
The learner will distinguish between aspects of dementia, depression, and delirium (by sorting cards with descriptive terms and phrases into the “best fit” diagnostic category).
Strongly Agree 1 2 3 4 5 Strongly Disagree

The learner will explain the rationale for placing cards into a diagnostic category.
Strongly Agree 1 2 3 4 5 Strongly Disagree

How was the length of the session?
The length of the session was (check one): ____too long  _____about right  _____too short
Please specify: _______________________

I will utilize this activity again in the future.
Strongly Agree 1 2 3 4 5 Strongly Disagree

Comments (How can we improve this session?):