

Training Residents in a Best-Practice Approach to the Diagnosis and Management of Alzheimer's Disease

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Abstract

Alzheimer's disease is the most common cause of dementia, affecting 5.4 million Americans, yet the diagnosis is frequently missed by physicians. Potential challenges in evaluating Alzheimer's disease include both cultural and medical origins. As a result, the approach to delivering an Alzheimer's disease diagnosis is variable in the medical community and has the potential to emotionally impact the patient and caregiver. In addition, dementia management amongst health care providers is often limited to pharmacotherapy, neglecting important psychosocial interventions that may improve quality of life. An observed structured clinical examination (OSCE) was developed to provide neurology residents with a foundation for the diagnosis and management of Alzheimer's disease. An introductory instructional video, dementia curriculum, and case study were circulated 1 week prior to the exercise to establish expectations for the OSCE. For the exercise, neurology residents within their postgraduate training years one to four (PGY1-PGY4) were asked to communicate the news of an Alzheimer's disease diagnosis to a standardized patient-caregiver dyad. Neurology faculty remotely evaluated residents on their ability to provide an accurate diagnosis and prognosis, respond to family's questions, and formulate a treatment plan that included both pharmacological and nonpharmacological interventions. In addition, learners were scored based on their communication skills. Postfeedback surveys from the residents and participating faculty were distributed and were valuable in assessing the impact of the exercise. Performance scores from OSCE video recordings were shared with residents following the OSCE.

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Introduction

Despite being the sixth leading cause of death in the US, Alzheimer's disease (AD) is often underdiagnosed, with only 45% of AD patients or caregivers being told of their diagnosis.¹ In addition, physicians frequently neglect to perform cognitive evaluations in patients who are later found to be suffering from underlying dementia.² Potential factors underlying these statistics include both cultural (e.g., fear of delivering bad news, concern regarding impact on doctor-patient relationship, and associated stigma) and medical (e.g., lack of definitive test, time limitations, and negative attitudes toward the impact of a diagnosis) challenges.^{3,4} However, the majority of patients, despite the unfavorable prognosis, would prefer to be informed about an underlying dementia.^{5,6} Furthermore, studies have shown that while the delivery of a new AD diagnosis

may trigger a negative emotional response in patients and care partners, these individuals prefer a compassionate approach that includes the patient and provides hope.⁴ Finally, family members generally appreciate the benefits of a dementia diagnosis, which enables these individuals to plan for the future.⁷

An observed structured clinical examination (OSCE) was created using standardized patients (SPs) where trainees were evaluated remotely by neurology faculty in their ability to provide a new diagnosis of AD. The overall project's goals were to provide learners with an understanding of the process of establishing an AD diagnosis, how to compassionately deliver a new AD diagnosis to a patient and caregiver, and an understanding of AD management.

This clinical exercise makes two unique contributions to the literature. First of all, the OSCE not only addresses the medical knowledge necessary for effectively delivering a new diagnosis of AD but also assesses the trainee's ability to demonstrate empathy and compassion upon

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sharing news of a life-changing diagnosis. Furthermore, the exercise uses standardized education materials created by ACT on Alzheimer's (a Minnesota-based collaborative to prepare the state for increased dementia prevalence) to introduce learners to the management of dementia as well as establish expectations for the OSCE.

Methods

All participants were provided the educational materials in advance of the clinical exercises (Appendices A, B, C, & D). A total of 17 neurology residents, ranging from postgraduate years one to four (PGY1-PGY4), participated in the simulation. The OSCE was held at the University of Minnesota's Interprofessional Education and Resource Center (IERC), where facilities enable remote audiovisual monitoring of trainees in examination rooms. Trainees were given case door notes (Appendix E) outlining the clinical case scenario in advance of the exercise but also had a copy available immediately prior to the start of the session. Participants had 18 minutes to provide a diagnosis, address family and patient questions, and develop a management plan.

A behavioral neurologist and professional educator within the IERC met with SPs prior to the OSCE to familiarize them with the process of receiving a new diagnosis of AD. The SPs received the door notes as well as the evaluation checklist (Appendix F). Of note, all of these participants had experience participating in similar exercises through the IERC. Rather than use a script for their interactions with trainees, SPs employed the notes and grading checklist as guidelines, improvising throughout the session. The professional educator and behavioral neurologist provided feedback to help inform reactions from the SPs portraying the patient and caregiver. The feedback from the behavioral neurologist and professional educator was instrumental in determining the accuracy of the response to an AD diagnosis amongst the SPs.

Evaluators included faculty within the Department of Neurology who were previously required to attend a 1-hour orientation session (Appendix G). In addition, evaluators were provided the evaluation checklist, which facilitated scoring of trainee performance in terms of medical knowledge and bedside manner (Appendix F). The checklist was partially influenced by the work of Zaleta and Carpenter⁸ describing patient-centered behaviors during the disclosure of a dementia diagnosis (positive emotional rapport building, facilitation, and positive affect, which includes responsiveness/engagement).

Educational Objectives

By the end of this session, the learner will be able to:

1. Understand the clinical rationale for diagnosing Alzheimer's disease.
2. Distinguish Alzheimer's disease from dementia.
3. Understand the prognosis of Alzheimer's disease.
4. Deliver the bad news of a new Alzheimer's diagnosis in a compassionate and effective manner.
5. Respond to questions of patient and caregiver.
6. Recognize the importance of caregiver and family support.

Feedback on final performance was provided to residents during 1:1 meetings. In addition, video recordings of the OSCE were used to supplement constructive feedback.

A PDF containing information on supplementary ACT on Alzheimer's material is also provided (Appendix H).

Results

Neurology resident performance scores ranged from 32.8% to 98.3% correct, with a mean score of 70.5%. In anticipation of the simulation, 82% (14/17) of residents reviewed the preparatory educational materials. Outcomes measures that correlated best with overall performance included the following:

1. Communication of treatment and interventions ($r = 0.4520$).
2. Communication of a specific diagnosis of AD ($r = 0.3786$).
3. Interpretation of tests/reasons from previous visit ($r = 0.3779$).
4. Demonstrating appropriate strategies to assess patient and caregiver understanding ($r = 0.3642$).
5. Communication of AD-related prognosis ($r = 0.3453$).

The 17 participants were asked to complete a survey at the end of the simulation, with 4 = strongly agree, 1 = strongly disagree, and 0 = don't know. Average scores are as follows: 3.71 overall thought the experience helped them better understand their strengths as a practitioner, 3.53 thought the experience helped them understand where they needed to improve clinical skills, and 3.71 thought this was an educational experience as a clinician.

The six faculty evaluators were asked similar questions with the same scoring system as described above. An av-

erage of the scores showed 3.67 thought a comprehensive OSCE should be used in the future, 3.67 thought they were able to meet the station's educational objectives in the time allotted, and 3.67 thought they received useful information about trainee's skills.

Discussion

The development of an OSCE relating to delivery of a new diagnosis of AD was intended to address a knowledge gap in the medical community for a common disease impacting 5.4 million individuals. This knowledge gap likely is related to the challenges of breaking bad news to a patient as well as the complexity of confirming AD with various objective tests. Fortunately, the ACT on Alzheimer's collaborative has developed toolkits to establish standards for the management of dementia within Minnesota. This clinical exercise utilized both these resources as well as SPs to introduce neurology residents to a best-practice approach toward dementia care.

There was a wide range of scores by residents on this evaluation, but mean scores greater than 70% suggest that this exercise was feasible and appropriate for PGY1-PGY4. Although PGY1s scored lower than PGY4s on this assessment, we still feel that this exercise is valuable even during the early stages of neurology training. The distribution of learning materials in advance of a simulation may have enhanced the learning experience and simulation performance for resident participants.

Effectively summarizing the clinical data, providing a specific diagnosis (AD vs. dementia), and discussing treatment were all factors that correlated with success; we suspect that the findings related to discussing management may be related to residents' ability to transition efficiently from providing a diagnosis to discussing a treatment plan within the 18-minute time frame. Overall, the exercise was well received by both residents and evaluators.

We conclude that the assessment of a resident's ability to deliver an AD diagnosis in a simulated environment is an effective method to assess and enhance a learner's ability to effectively communicate bad news to patients and families.

A potential limitation to this case scenario is that the components of the checklist were not validated but rather included behavioral outcomes that had been agreed upon by ACT on Alzheimer's. Unfortunately, there is minimal

literature to inform the approach to an AD diagnosis in this population. A second potential limitation to this exercise is the inherent subjectivity associated with evaluating bedside manner. However, the assessment tool distributed to evaluators provided a more objective framework for assessment. Thirdly, it is understood that certain evaluators may not have an extensive background in dementia management and therefore may need additional education/training in identifying the appropriate end points during the OSCE. Thus, it is important to have a detailed orientation for evaluators providing general guidelines for a best-practice approach to the diagnosis and management of AD.

This exercise could be further modified by including another family member, such as a son or daughter, who may have a separate perspective from that of the patient's spouse. In addition, future options include creating subsequent scenarios where learners are asked to navigate evolving issues such as transitions to structured living in the moderate and severe stages of dementia.

Future projects to evaluate the impact of this exercise on neurology resident learning include collection of resident-generated data from the shelf exam, resident milestones, and outpatient dementia clinic evaluations. We suspect that the combination of practical experiences through SPs and specific peer-reviewed clinical guidelines through ACT on Alzheimer's will provide a foundation for enhancing the medical profession's ability to recognize and manage neurodegenerative diseases such as AD.

Keywords

Alzheimer's Disease, Dementia, Neurology, Practical Neurology Skills, Care-Based Neurology Teaching

Appendices

- A. Delivering an Alzheimer's Disease Diagnosis.mp4
- B. Dementia Curriculum.zip
- C. ACT Managing Dementia.pdf
- D. ACT Clinical Practice Tool.pdf
- E. AD Case Door Note.doc
- F. AD OSCE SP Checklist.pdf
- G. AD OSCE Evaluator Guide.ppt
- H. ACT on Alzheimers Supplementary Resources.pdf

All appendices are considered an integral part of the peer-reviewed MedEdPORTAL publication. Please visit www.mededportal.org/publication/10377 to download these files.

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Human Subjects Research: This publication does not contain data obtained from human subjects.

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