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Objective Structured Clinical Exams (OSCE) are a feasible method of teaching how to discuss a nonepileptic seizure diagnosis

David Valentine [a,*], Arielle Kurzweil [a], Sondra Zabar [b], Ariane Lewis [a,c]

[a] Department of Neurology, New York University School of Medicine, New York, NY, United States of America
[b] Department of Medicine, New York University School of Medicine, New York, NY, United States of America
[c] Department of Neurosurgery, New York University School of Medicine, New York, NY, United States of America

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ABSTRACT

Objective: Presenting the diagnosis of psychogenic nonepileptic seizures (PNES) can be a difficult task, but disclosing this information effectively is important to optimize patient outcomes. We sought to develop a standardized method to teach neurology residents how to introduce the diagnosis of PNES via an objective structured clinical examination (OSCE) with a standardized patient (SP).

Methods: In conjunction with the New York University School of Medicine Simulation Center (NYSIM), we designed an OSCE in which a resident had to inform a SP of her diagnosis of PNES and discuss a treatment plan. The SP was provided with details to gradually disclose depending on what the resident said about the history of her episodes, triggers for her episodes and her history of sexual abuse. Each encounter was observed by an attending physician who provided real-time feedback to the resident after the session. Additionally, the SP completed an objective written checklist of items the resident should have covered in the session and gave them verbal feedback.

Results: Twenty-six adult neurology (n = 22), child neurology (n = 3), and neuropsychiatry (n = 1) residents participated in this OSCE in 2018 and 2019, with full data available for 25 participants. Residents reported the OSCE was very useful (mean Likert score of 4.9/5). They felt moderately prepared (mean Likert score 3.8/5) and rated their performance as a mean of 3.3/5. On the SP's checklist, most residents were rated as Well Done in the domains of information gathering, relationship development, and education and counseling. Only in the domain of psychosocial assessment were most residents rated as Not Done (only 7/25 inquired about past trauma as a risk factor for PNES).

Significance: The OSCEs are a feasible and useful way to teach neurology residents about discussing PNES, as they allow for provision of real-time practice and feedback in a safe environment without real patients.

1. Introduction

Psychogenic nonepileptic seizures (PNES) are the most common form of functional neurologic disorder presenting to neurologists, marked by paroxysmal episodes of altered awareness, movement, or sensation that mimic epileptic seizures but are not associated with concomitant epileptiform abnormalities on electroencephalography (EEG); PNES is treated with psychotherapy rather than antiepileptic medications [1]. The condition has an incidence of up to 5 per 100,000 people per year [2], most commonly beginning in early adult years. Associated factors include female sex, epilepsy, other psychogenic disorders or mental health problems, and/or some form of trauma, such as mild head trauma or sexual trauma, in the past [3–6]. Approximately 40% of epilepsy monitoring unit admissions are ultimately attributed to PNES [7], and it adds nearly $2000 per patient per year to annual healthcare costs [8]. Delays in diagnosis of PNES can lead to inappropriate treatment, worsened quality of life, and overuse of healthcare resources [9–11], making the condition a significant and dangerous burden on both individual patients and the healthcare system as a whole.

To improve the outcome for patients with PNES, it is vital that practitioners present the diagnosis of PNES effectively and compassionately. The manner in which the diagnosis is given impacts acceptance of the diagnosis, and a multicenter, prospective study from 2010 suggests an effective discussion of the diagnosis can decrease utilization of hospital services for events while increasing short-term likelihood of event resolution [6,12–16]. However, delivering the diagnosis is difficult. Often, patients are only with PNES diagnoses after extensive workup by multiple physicians, at which point they harbor a belief that they have

* Corresponding author at: Clinical Neurophysiology Fellowship Program, Department of Neurology, NYU Langone Medical Center, 530 First Avenue, HCC-5A, New York, NY 10016, United States of America.
E-mail address: david.valentine2@nyumc.org (D. Valentine).

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epilepsy [17], and in around 10 % of cases, patients with PNES do, in fact, have concomitant epilepsy [18]. Additionally, compared to those with epileptic seizures, those with PNES are more likely to have cluster B personality disorders, which can cause them to react unpredictably to a diagnosis of PNES [19]. Arain et al. found that after being told they have PNES, over half of patients lose faith in their diagnosing physician; nearly half think that others believe they are deliberately faking seizures; 40% continue to believe that there is a physical cause for their events; 25% report thinking that their doctor simply does not know the cause of their seizures, and 10% overtly disagree that the cause is psychological [20]. Because so many of these patients do not fully accept their diagnosis, most do not follow-up with psychological care and continue to have episodes [20]. Aside from rejection, other poor prognostic factors for PNES are low intelligence quotient (IQ), comorbid psychiatric conditions including personality disorders, history of violent behavior, poor social supports, and unemployment [21–23].

It is imperative that practitioners who care for patients with PNES be skilled at delivering this diagnosis given its large impact on prognosis [6]. While there are differences of opinion on certain aspects of this discussion, and no controlled trials regarding which approach is best, there are some common elements; namely that the diagnosis should be given as good news, and the conversation should involve introduction of the ideas that the episodes 1) are not epileptic in nature, 2) can be differentiated via capture on EEG, 3) arise from psychological distress, even if stress is not immediately recognized by the patient, and 4) can respond to psychological therapy, but not antiepileptic medications. There are different ways to approach these topics. Some start with a two-way discussion of the events and their characterization, and overtly bring up the well-known correlation between nonepileptic seizures and prior sexual abuse [24]. Others start with a utilitarian discussion of video-EEG and its role in the diagnosis of epilepsy, and do not directly address the association with sexual abuse or give a formal name of "nonepileptic seizures" to the events [25]. Still others have tried a dual approach with both face-to-face discussions and written material that validates the real nature of the symptomatic attacks while introducing the expectation that they can resolve with psychological treatment and time [16]. Despite these differences, the commonalities described previously may offer a sufficient basis for training modules on discussing PNES as a diagnosis.

Training on the approach to disclosing a diagnosis of PNES should begin in residency. However, there has not yet been a published, consistent method to teach residents how to facilitate these discussions. Simulations utilizing an objective structured clinical exam (OSCE) offer a uniquely valuable opportunity to hone skills without adversely affecting patient outcomes. The benefits of OSCEs and other forms of simulation are well documented, and these teaching methods lead to greater improvements in clinical skills compared to lecture-based didactics alone [26]. A recent paper on performance of the neurologic exam even found that exam proficiency significantly improved after only a single OSCE [27], perhaps because of the real-time feedback from the varied perspectives of the residents themselves, the patient, and a supervising physician.

We designed an OSCE case to educate residents about how to discuss the diagnosis of PNES, and provide trainees with direct feedback from both a standardized patient (SP) and a supervising physician. Herein, we discuss the format of this OSCE and summarize resident performance as well as their assessment of the program.

2. Methods

In conjunction with the New York University School of Medicine Simulation Center (NYSIM), we designed an OSCE case in which a resident was tasked with informing a SP that their episodes were consistent with PNES.

The SP case was written by a neurologist and simulation specialist. See supplemental data for full case details, which included her first lifetime episode, triggers for these episodes (i.e., arguments with her ex-boyfriend), prior emergency room visits and admissions for these episodes, her antiepileptic regimen, and a psychosocial history including physical and sexual abuse by her father who was an alcoholic and died shortly prior to the onset of the episodes. See the supplemental materials for full details. The learner was tasked with 1) explaining the findings of the EEG, 2) informing the patient of the diagnosis of PNES, and 3) make a treatment plan. The resident was given 10 min to complete the encounter. The SP was provided with a clear summary of what the resident should ideally address in the visit, as listed in Table 1. The SP was trained by a NYSIM SP trainer and a neurology faculty member for 3 h in character portrayal and checklist completion.

The clinical encounter, which was observed by a neurology attending through one-way glass, lasted 10 min and was followed by 5 min of feedback from the attending physician and SP.

The SP then completed a 29-item behavioral anchored checklist with 9 domains: information gathering, relationship development, education and counseling, organization and time management, assessment, treatment plan development, patient satisfaction and patient activation (engagement and support for interactivity in the encounter). Item response options were rated as not done, partly done, and well done, each with descriptive behavioral anchors to enhance rating reliability (see Table 1). Additionally, the resident provided feedback on the interaction in the form of free-text responses and completion of 5-point Likert scales on their preparation for, performance at, and thoughts on the usefulness of the OSCE case (with 5 being the best and 1 being the worst). IRB review of this educational initiative was waived.

3. Results

Twenty-six New York University (NYU) fourth year residents from adult neurology (n = 22), child neurology (n = 3), and neuropsychiatry (n = 1) completed the OSCE case in 2018 and 2019. Data were available for 25 of these participants. Residents overall reported that the OSCE case was very useful, with a mean Likert score of 4.9/5. They believed that their preparation for and performance in the case was mediocre (3.8/5 and 3.3/5, respectively; see Fig. 1). Among written free-text responses from residents, several key points emerged: 1) effectively describing PNES and its usual causes is difficult in a short time frame; 2) ensuring a patient knows that she does not have epilepsy can require multiple tries with different phraseology; 3) explaining the results of an EEG in a period with strict time constraints is difficult; 4) having prerehearsed phrases for aspects of the discussion about PNES is helpful; and 5) it can be uncomfortable to broach the subject of prior sexual or physical abuse.

A summary of resident performance is found in Table 2. Overall, the majority of residents were rated as Well Done in the domains of information gathering, relationship development, and education and counseling. There was a greater tendency to be rated Partly Done for the domains of treatment plan development, patient satisfaction and inclusion, and organization and time management. Only in the domain of psychosocial assessment were most residents rated as Not Done (19/25 residents did not inquire about past trauma at all and nearly every resident either did not, or only partially, elicited a full set of life stressors (10/25 and 12/25, respectively)).

4. Discussion

Delivery of a diagnosis of PNES in a clear, sensitive, and positive manner is critical in the outcomes of these patients [28]. We sought to provide residents with the opportunity to practice their skills of presenting a PNES diagnosis without risk to real patients, using an OSCE case with real-time, immediate feedback from the perspective of both the patient and an observing attending physician.

Overall, residents found the OSCE to be useful, with self-reported 5-point Likert scores comparable to a similar published OSCE on

Table 1
Anchors of core competencies.

Competency domains	Checklist item	Not Done	Partly Done	Well Done
Information Gathering	Elicited your responses using appropriate questions	Asked leading questions AND more than one at a time	Used leading questions OR asked more than one question at a time	Asked questions one at a time without leading you in your response
	Managed the narrative/story flow of your story	Not able to elicit your story because questions not organized logically	Elicited main elements of narrative of story, but illogical order of questions disrupted flow	Elicited full narrative by asking questions that facilitated natural flow of story
	Clarified information throughout by repeating to make sure you understood	Did not clarify (did not repeat back to you the information you provided)	Repeated info you provided but did not invite you to indicate accuracy	Repeated info and directly invited you to indicate the accuracy
	Allowed you to talk without interrupting	Interrupted	Did not interrupt BUT didn't always give enough time to you	Did not interrupt; Allowed to express thoughts fully
Relationship Development	Communicated intention to help/concern	Didn't communicate either	Words, actions conveyed intention to help	Actions, words conveyed intention to help AND concern
	Nonverbal behavior enriched communication (e.g., eye contact, posture)	Nonverbal behavior was negative	Nonverbal behavior demonstrated attentiveness	Nonverbal behavior facilitated effective communication
	Acknowledged emotions/feelings appropriately	DID NOT acknowledge emotions/feelings	Acknowledge emotions/feelings	Acknowledged & responded in ways that made you feel better
	Was accepting/nonjudgmental	Made judgmental comments OR facial expressions	Did not express judgment but did not demonstrate respect	Actively demonstrated respect
	Used words you understood and/or explained jargon	Consistently used jargon WITHOUT further explanation	Sometimes used jargon AND did not explain it	Explained jargon when used OR avoided completely
Education and Counseling	Asked questions to see what you understood	Did not check for understanding	Asked if had any questions BUT did not check for understanding	Assessed understanding by checking in throughout
	Provided clear explanations/information	Gave confusing or no explanations	Info was somewhat clear BUT somewhat hard to understand	Provided info in small bits AND summarized to make sure it's clear
	Collaborated with you in identifying possible next steps/plan	Told you next steps/plan (OR no next steps/plan)	Told you next steps THEN asked patient's views	Discussed options THE mutually developed a plan
	Expresses understanding and/or empathy about your difficult situation	Was harried or annoyed	Says concerned, means something else	Is genuinely trying to be helpful and to reverse bad other doctors experience
	Offers tempered hope and counseling	Does not offer hope	Offers only medication OR counseling	Offers medication and counseling and explains the merits of both together or separately
	Proposes gradual evaluation	No	Yes	Proposes evaluation with a psychotherapist
	Respectfully discusses plan for treatment	Does not discuss side effects or length of treatment	Discusses side effects OR length of treatment	Discusses side effects clearly AND length of treatment
Assessment	Elicited full set of stressors and life story	Got stuck on one problem	Got most of them	Asked for all stressors
	Inquired about past trauma	Does not assess	Asks but doesn't convey sincere concern	Asked and expressed concerned
Treatment Plan	Collaborated with you to set a goal and follow-up plan (e.g., asked for your input on the plan, etc.)	Did not develop a follow-up plan	Told you the next steps in follow-up care	Collaborated with you to set a goal and follow-up plan (e.g., asked for your input on the plan, etc.)
	Checks your understanding of treatment plan	Did not ask	Asked about questions but in a brisk manner, didn't allow sufficient time	Asked you what further questions you had in a nonjudgmental and supportive manner
	Gave information about follow-up and further contact with MD	Did not address	Addressed follow-up but was not specific	Specifically addressed follow-up and made sure you agreed with, were committed to plan
Patient Satisfaction and Inclusion	Was sensitive/responsive to my needs/situation	Not sensitive or responsive to my needs	Sensitive to my needs/situation but not responsive	Sensitive and responsive (adjusted to my needs/situation in terms of goals/actions)
	Took a personal interest in me; treated me as a person	Did not see me as a person	viewed me as a person, but did not take personal interest	Took an active personal interest in me
	Made you feel like you had enough time (not rushed)	Did not have enough time; Visit felt rushed	Mostly had enough time (visit a bit rushed); felt some time pressure	Felt no real-time pressures; covered most without pressure
	Helped me to understand the difficulty of my case	Did not help me understand	Helped me understand some things but not everything	Helped me fully understand what I can do at this point
	Made me feel like I could take control of my care	Did not	Made me feel I could take a little more control; but will not change much	Made me feel like I could really take control; change the way I viewed my health
	Helped me to understand that this would take time	I did not find out about treatment options	I found out about some of the treatment options	I found out about all of the relevant treatment options
	Made me feel confident, I can have someone to work with	Did not affect my confidence	Helped me feel somewhat confident that I could deal with new issues	Helped me feel quite confident that I could deal with new issues
Organization and Time Management	Managed time effectively	Paced the encounter poorly; did not manage time well	Did do some managing of the time, covered much of what needed to be	Paced the encounter very well; did everything needed to do

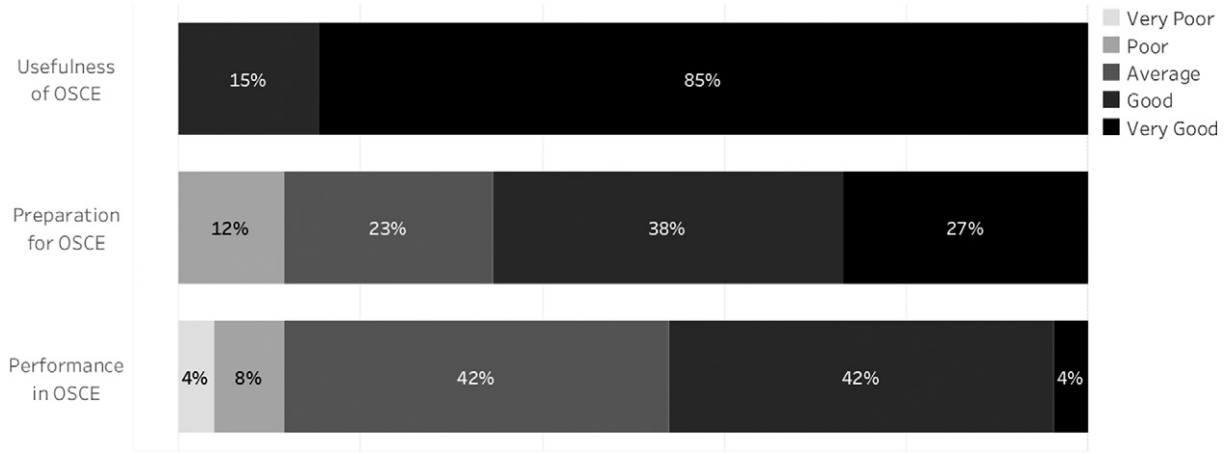

Fig. 1. Resident reported feedback on the OSCE.

discussions regarding tPA (3.4 for tPA and 3.8 for PNES on preparedness, 3.5 for tPA and 3.3 for PNES on performance, and 4.8 for tPA and 4.9 for PNES for usefulness) [29]. Residents performed very well in interpersonal domains, quickly forming a positive rapport and making the SP feel reassured about their competency. However, performance at counseling about PNES and developing a collaborative treatment plan varied, demonstrating that there is, indeed, a need for education and feedback for residents from faculty and SPs themselves on how to best present the diagnosis of PNES. This was further confirmed by resident high rating of the utility of this OSCE case.

The fact that nearly all residents did not address a sexual abuse history during the case is notable, but unsurprising, given the wide variation in the approach to such discussions described in the literature, and the challenges associated with bringing up a history of abuse [16,20,24]. Most providers are not typically trained in the tactful approach to and exploration of such traumatic events, which is why the necessary

Table 2
Resident performance on the OSCE.

	Not Done	Partly Done	Well Done
Information gathering			
Elicited your responses using appropriate questions	0 (0%)	2 (8%)	23 (92%)
Managed the narrative/story flow of your story	0 (0%)	7 (28%)	18 (72%)
Clarified information throughout by repeating to make sure you understood	1 (4%)	2 (8%)	22 (88%)
Allowed you to talk without interrupting	1 (4%)	5 (20%)	19 (76%)
Relationship development			
Communicated intention to help/concern	0 (0%)	2 (8%)	23 (92%)
Nonverbal behavior enriched communication (e.g., eye contact, posture)	0 (0%)	0 (0%)	25 (100%)
Acknowledged emotions/feelings appropriately	1 (4%)	7 (28%)	17 (68%)
Was accepting/nonjudgmental	0 (0%)	1 (4%)	24 (96%)
Used words you understood and/or explained jargon	0 (0%)	10 (40%)	15 (60%)
Education and counseling			
Asked questions to see what you understood	0 (0%)	2 (8%)	23 (92%)
Provided clear explanations/information	0 (0%)	10 (40%)	15 (60%)
Collaborated with you in identifying possible next steps/plan	0 (0%)	14 (56%)	11 (44%)
Expresses understanding and/or empathy about your difficult situation	0 (0%)	2 (8%)	23 (92%)
Offers tempered hope and counseling	0 (0%)	4 (16%)	21 (84%)
Proposes gradual evaluation	0 (0%)	11 (44%)	14 (56%)
Respectfully discusses plan for treatment	0 (0%)	14 (56%)	11 (44%)
Assessment			
Elicited full set of stressors and life story	10 (40%)	12 (48%)	3 (12%)
Inquired about past trauma	18 (72%)	2 (8%)	5 (20%)
Treatment plan			
Collaborated with you to set a goal and follow-up plan (e.g., asked for your input on the plan, etc.)	0 (0%)	17 (68%)	8 (32%)
Checks your understanding of treatment plan	0 (0%)	6 (24%)	19 (76%)
Gave information about follow-up and further contact with MD	0 (0%)	12 (48%)	13 (52%)
Patient satisfaction and inclusion			
Was sensitive/responsive to my needs/situation	0 (0%)	6 (24%)	19 (76%)
Took a personal interest in me; treated me as a person	0 (0%)	3 (12%)	22 (88%)
Made you feel like you had enough time (not rushed)	0 (0%)	13 (52%)	12 (48%)
Helped me to understand the difficulty of my case	0 (0%)	13 (52%)	12 (48%)
Made me feel like I could take control of my care	0 (0%)	13 (52%)	12 (48%)
Helped me to understand that this would take time	0 (0%)	13 (52%)	12 (48%)
Made me feel confident, I can have someone to work with	0 (0%)	14 (56%)	11 (44%)
Organization and time management			
Managed time effectively	0 (0%)	16 (64%)	9 (36%)

psychotherapy for treatment of PNES is often deferred to an experienced provider like a psychotherapist or psychiatrist. For many physicians, approaching this topic can be uncomfortable, with concern for inadequate time for such a discussion, fear of patient resistance, and lack of knowledge about how to navigate such a conversation [30,31]. Furthermore, the context of the clinical encounter should also be considered in broaching this subject; perhaps this is why, although some authors endorse addressing sexual abuse in early discussions about PNES [24], others only do so if the patient brings it up [25], and some practitioners do not address it at all, particularly if adequate psychiatric follow-up cannot be assured [16].

To our knowledge, this is the first paper to demonstrate the feasibility and utility of an OSCE to teach residents how to approach discussion of the diagnosis and management of PNES. With the exception of one paper on the use of OSCEs to train residents on the discussion of tPA administration [29], most prior publications on OSCEs within neurology have focused on the neurologic exam, lumbar punctures, or procedural algorithms like stroke codes [27,32–34] rather than counseling or disclosure of a difficult diagnosis. More broadly, OSCEs are often used to teach trainees about performing assessments and procedures [26,33,34], but our data contribute to a growing literature that OSCEs are an ideal educational methodology for communication skills training. For instance, a 2017 study found that a combination of lecture-based didactics and simulation was superior to lecture-based didactics alone in preparing first year psychiatry residents for dealing with acutely agitated patients [35]. The OSCEs can also be beneficial for faculty, as they allow faculty to systematically review the performance of each resident in succession for a particular skill, which could bring to light gaps in a program's educational approach.

Although our findings suggest that simulation may be a useful method for teaching neurology residents about disclosure of the diagnosis of PNES, extrapolation of our results is limited because of the following: 1) our data were obtained from a single center and included a relatively small cohort of residents; 2) this was designed as a programmatic needs assessment for the residency and evaluation of a teaching experience rather than an intervention, so we do not have data on resident performance at delivering a diagnosis of PNES at subsequent real-patient encounters; and 3) we did not utilize a randomized controlled design to compare use of an OSCE to any other teaching modality. Additionally, utilization of an OSCE to educate residents requires access to simulation expertise and a center.

Beyond these organizational and structural limitations, the manner in which OSCEs are rated as a whole may be more sensitive to whether particular questions are asked or statements made, and less so as to how such aspects of the encounter are done. There is evidence that subtle interpersonal messages can make delivery of such a diagnosis as PNES more difficult. For instance, in discussing PNES, doctors tend to use language that overemphasizes their means of coming to the diagnosis, which can unintentionally make the diagnosis seem different than other medical conditions and increase patients' skepticism and confusion regarding it [36]. This is an important point to consider in further developing and optimizing OSCEs as a teaching medium, particularly given evidence that short workshops, as such could possibly be integrated into an OSCE pre- or postsession, can help to change physician behavior when it comes to the language and reasoning used in the presentation of functional neurologic disorders [37].

5. Conclusions

Presenting the diagnosis of PNES is difficult, but mastery of this skill is crucial to optimizing patient outcomes. One OSCE case is a feasible and effective approach to teach residents this skill and provide them with real-time feedback without risking harm to patients. Future studies may focus on the long-term impact of this type of educational exercise on patient care.

Declaration of Competing Interest

The authors have no conflict of interest to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.yebeh.2019.106526.

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