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Original article

'The Move', an innovative simulation-based medical education program using roleplay to teach neurological semiology: Students' and teachers' perceptions

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ABSTRACT

Introduction. – Neurological disorders are frequently being managed by general practitioners. It is therefore critical that future physicians become comfortable with neurological examination and physical diagnosis. Graduating medical students often consider neurological examination as one of the clinical skills they are least comfortable with, and they even tend to be neurophobic. One way to improve the learning of neurological semiology is to design innovative learner-friendly educational methods, including simulation training.

Methods. – The feasibility of mime-based roleplaying was tested by a simulation training program in neurological semiology called 'The Move'. The program was proposed to third-year medical students at Pierre and Marie Curie University in Paris during their neurology rotation. Students were trained to roleplay patients by miming various neurological syndromes (pyramidal, vestibular, cerebellar, parkinsonian) as well as distal axonopathy, chorea and tonic–clonic seizures. Using an anonymous self-administered questionnaire, the students' and teachers' emotional experience and views on the impact of the program were then investigated.

Results. – A total of 223/365 students (61%) chose to participate in the study. Both students and teachers felt their participation was pleasant. Students stated that The Move increased their

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motivation to learn neurological semiology (78%), and improved both their understanding of the subject (77%) and their long-term memorization of the teaching content (86%). Although only a minority thought The Move was likely to improve their performance on their final medical examination (32%), a clear majority (77%) thought it would be useful for their future clinical practice. Both students (87%) and teachers (95%) thought The Move should be included in the medical curriculum.

Conclusion. – Mime-based roleplaying simulation may be a valuable tool for training medical students in neurological semiology, and may also help them to overcome neurophobia.

1. Introduction

The burden of neurological disorders is growing with aging of the population in both high- and low-income countries [1–3]. As a result, neurological disorders are becoming more frequently managed by general practitioners (GP) [4]. However, insufficient or inappropriate training in core neurological skills at medical school could lead to inappropriate patient management in primary-care settings [5]. Proper identification of clinical signs and symptoms is the starting point for reaching a diagnosis. Thus, it is critical for future physicians to become comfortable with neurological examination and physical diagnosis. However, neurophobia – fear of neurology – is frequently found among medical students worldwide [6–11]. The complexity of neurological examination is an important factor contributing to neurophobia [7], and graduating medical students often state that neurological examination is one of the clinical skills with which they are least comfortable [12]. Indeed, the performance of medical students in physical examinations has been found to be weaker in neurology than in other clinical fields [13–15].

One way to overcome neurophobia and improve the learning of neurological semiology is to design a more effective neurological curriculum. Neurophobia stems mainly from inadequate undergraduate teaching [16], and the critical period for gaining knowledge in neurology is most likely during the transition from preclinical to clinical years [9]. Training in neurological semiology at medical school might be improved through innovative learner-friendly educational methods. Clinical simulation is a teaching tool that allows medical education to be delivered without compromising patient safety or well-being [17,18]. Simulation-based medical education is probably more interactive, enjoyable and effective than didactic teaching for improving clinical skills [18–22], and may facilitate the transition to the clinical environment. Mime is the technique of portraying a character or expressing an idea or mood through gestures and body movements. It can also be used for educational purposes, as gestures and body movements can help learners acquire knowledge [23,24].

The feasibility of mime-based roleplaying simulation training in neurological semiology was tested in third-year medical students of Pierre and Marie Curie University (UPMC) in Paris, and the students' and teachers' emotional experience and opinions of this approach were also investigated.

2. Methods

2.1. Procedure and setting

The study was conducted from October 2014 to June 2015 at the UPMC in Paris (France). Third-year medical students were invited to voluntarily participate in The Move, a pilot learning experience, during their neurology rotation, which consisted of a 14-week module comprising lectures, bedside teaching and clinical reasoning sessions. The Move was proposed in addition to the regular teaching content. Students were informed in advance that they would be asked to complete an anonymous questionnaire designed to evaluate the training session, and that their participation (or non-participation) would have no negative repercussions. The students' age and gender were obtained from institutional records. The study was approved by the UPMC review board.

2.2. The Move medical education program

The Move is an innovative pilot program based on simulation training and designed to improve the learning of neurological semiology. The program was proposed to one-third of the third-year students (about 120–130 students) at a time, according to the structure of the neurology rotation (the program was eventually proposed to all third-year students). It included both large-group sessions (two for training and one final session) and small-group sessions (8–12 students). Basically, the students were trained to roleplay patients by miming various neurological syndromes (pyramidal, vestibular, cerebellar, parkinsonian), as well as distal axonopathy, chorea and tonic–clonic seizures. At the outset of the program, it was clearly explained that:

- the purpose was not to mock patients or other students and;
- students who did not feel comfortable with miming could just watch;
- it was also made clear that, in addition to its educational objectives, benevolence and fun were the main guiding ideas behind The Move program.

The two large-group training sessions lasted for 3 hours each and were run by two physicians from the neurology teaching department (one senior faculty member and one assistant professor). Volunteers were asked to either mime a syndrome or

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