Virtual patients: an effective educational intervention to improve paediatric basic specialist trainee education in the management of suspected child abuse?

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Abstract
Child abuse is a particularly difficult subject to teach at both undergraduate and postgraduate level. Most doctors are dissatisfied with their training in child abuse recognition and management.[1] We developed an interactive video based Virtual Patient to provide formal training for paediatric Basic Specialist Trainees in the recognition of suspected child abuse. The Virtual Patient case revolves around the management of suspected physical abuse in a seven month old child, who initially presents to the Emergency Department with viral upper respiratory tract symptoms. This Virtual Patient was used to facilitate a case discussion with Basic Specialist Trainees. A questionnaire was developed to determine their perception of the value of the Virtual Patient as an educational tool. Twenty five Basic Specialist Trainees completed the questionnaire. Upon completion of the case, 23/25 (92%) participants reported greater self confidence in their ability to recognize cases of suspected child abuse and 24/25 (96%) of participants reported greater self confidence in their ability to report cases of suspected child abuse. Basic Specialist Trainees perceived the Virtual Patient to be a useful educational tool. Virtual Patients may have a role to play in enhancing postgraduate training in the recognition of suspected child abuse.

Introduction
Child protection is a critical component of training for all doctors who have contact with children and their families. The Child Abuse Recognition Experience Study highlights that one of the main factors which contribute to doctorsâ discomfort with the management of child abuse is their lack of education and training.[2,3] Studies have demonstrated that the likelihood of reporting suspected child maltreatment among practicing physicians is related to the amount of training which they receive.[4] Effective education and training needs to equip doctors with a range of clinical competencies including; history taking, clinical examination, documentation, communication skills and decision making ability.[5] In addition, it needs to promote the professional development of doctors as advocates for childrenâ s rights. As a junior doctor is often the only doctor to assess children presenting with an injury or illness to the Emergency Department, it is crucial that they are skilled in the identification of possible child abuse or neglect. Research by MacLeod et al found that junior doctors working in their paediatric Emergency Department often failed to recognize standard indicators of abuse.[6] Studies emphasize that paediatric traineesâ lack of knowledge would benefit from an increase in training opportunities.[7]

Methods
Virtual Patients (VP), interactive computer based programs which simulate real life clinical scenarios, are becoming an increasingly common tool in medical education. They are used across a variety of clinical disciplines for both teaching and assessment. In order to evaluate the potential role which Virtual Patients could have in teaching paediatric Basic Specialist Trainees about child abuse and raising awareness of the professional difficulties surrounding itsâ diagnosis and management, we developed a Virtual Patient based on a case of suspected child abuse. The Virtual Patient consists of a series of connected videotaped encounters centred around an interactive clinical case. In order to increase the authenticity of the case, the videos were filmed in the Emergency Department of a tertiary paediatric referral hospital. Professional actors were hired to play the role of the mother, consultant and junior doctor.

The case revolves around the management of a seven month old child who presented to the Emergency Department with viral upper respiratory tract symptoms. The Senior House Officer fails to notice bruises on the infantâ s cheek or diagnose posterior rib fractures on a chest x-ray. Participants are guided through the evolving case, with opportunities for reflection, clinical knowledge testing and exploration of professional dilemmas. As progression of the case is dependent on participantsâ response to questions, a high level of interactivity is maintained. For example, if participants think that the SHO should confront the mother regarding the fractures, the VP depicts the scene of the SHO approaching the mother and accusing her of child abuse. The mother subsequently storms out of the Emergency Department and the SHO is left to deal with the consequences. However, if participants think that the SHO should raise her concerns of suspected child abuse to the consultant, the scenario then depicts the conversation between the consultant and the mother and the appropriate management of cases of suspected child abuse.

This VP is being developed for use as online self study module. However, in order to determine whether paediatric Basic Specialist Trainees view the Virtual Patient as an acceptable learning tool for their stage in training, a pilot study was conducted. The VP was used to facilitate a child abuse case discussion as part of the Basic Specialist Training study day at the Royal College of Physicians in Ireland. Basic Specialist Trainees are at an early stage in their paediatric career, with most trainees having less than two years clinical experience in paediatrics. It was therefore felt that the case would be appropriate for their level of training. A questionnaire was developed to determine their perception of the value of the VP as an educational tool to enhance their training in the recognition of suspected child abuse. Respondents were asked to rate their agreement with 18 statements on a 1 to 4 Likert scale.

Results
All participants (N=25) completed the questionnaire. 100% of participants agreed or strongly agreed that the case was enjoyable, interactive, appropriate for their level of training and a valuable use of their time. All participants agreed that they would like to see similar cases throughout their training and felt that group discussion promoted more learning than working on the case individually. Upon completion of the case, 23/25 (92%) participants reported greater self confidence in their ability to recognize cases of suspected child abuse and 24/25 (96%) of participants reported greater self confidence in their ability to report cases of suspected child abuse. All participants felt that the VP helped raise their awareness of the difficulties surrounding the diagnosis and management of child abuse and enabled them to identify deficits in their knowledge.

Discussion
This pilot study was conducted to determine whether Basic Specialist Trainees in Ireland perceived a VP to be an acceptable learning tool to enhance their training in the recognition of suspected child abuse. There was an overwhelmingly positive response to the VP case. The vast majority of participants reported improvements in their knowledge, confidence and attitude towards the recognition and management of child abuse. Internationally, there is concern regarding the ability of doctors of all grades and specialities to respond appropriately and effectively to cases of suspected child abuse.[8] Numerous papers have emphasized that many doctors perceive their training in the recognition and management of suspected child abuse to be inadequate.[9,10] Child abuse is a particularly difficult subject to teach at both undergraduate and postgraduate level, and there is limited research regarding the effectiveness of available educational interventions.[11] To our knowledge, this is the first study to explore the role which VP can play in child protection training for Basic Specialist Trainees.

Although the results of this pilot study are limited to participant satisfaction and self assessment reports, the results identify the potential role which this innovative virtual learning tool can have in enhancing postgraduate child protection training. The number of participants involved in the study was small, however the group was felt to be representative of Basic Specialist Trainees currently completing their paediatric training in Ireland. The VP was developed for use as an online self study module, however all participants felt that group discussion promoted more learning than completing the case individually. Further studies are needed to determine which method of delivery will promote more effective learning and to evaluate the reliability and validity of the VP as an educational tool.

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References

1. Woolf A, Taylor L, Melnicoe L, Andolsek K, Dubowitz H, De Vos E, Newberger E. What residents know about child abuse? Implications of a survey of knowledge and attitudes. Am J Dis Child1988;142:668â 72.
2. Flaherty EG, Sege RD, Griffith J, Price LL, Wasserman R, Slora E, Dhepyasuwan N, Harris D, Norton D, Angelilli ML, Abney D, Binns HJ. From Suspicion of Physical Child Abuse to Reporting: primary care clinician decision-making. The Child Abuse Recognition Experience Study Research Group. Pediatrics.2008;122:611â 619
3. Jones R, Flaherty EG, Binns HJ, Price LL, Slora E, Abney D, Harris DL, Christoffel KK, Sege RD. Cliniciansâ description of factors influencing their reporting of suspected child abuse: report of the Child Abuse Reporting Experience Study Research Group. Pediatrics. 2008;122:259â 266
4. Lawrence LL, Brannen SJ. The impact of physician training on child maltreatment reporting: a multi-speciality study. Mil Med. 2000 Aug;165:607-11
5. Bannon MJ, Carter YH. Paediatricians and child protection: the need for effective education and training. Arch Dis Child. 2003;88:560 â 562
6. Macleod C, Dornan O, Livingstone A, McCormack, Lees J, Jenkins M. Teaching junior doctors to recognise abuse and neglect. Really Good Stuff. Med Educ 2003;37:1025-1049
7. Dubowitz H, Black M. Teaching pediatric residents about child maltreatment. J Dev Behav Pediatr. 1991 Oct; 12:305-7
8. Warner JE, Hansen DJ. The identification and reporting of physical abuse by physicians: a review and implications for research. Child Abuse Negl 1994;18:11-25
9. Narayan AP, Socolar RS, St Claire K. Pediatric residency training in child abuse and neglect in the United States. Pediatrics. 2006;117:2215â 2221
10. Starling SP, Heisler KW, Paulson JF, Youmans E. Child Abuse Training and Knowledge: A National Survey of Emergency Medicine, Family Medicine, and Pediatric Residents and Program Directors. Pediatrics Vol. 123 No. 4 April 2009, pp. e595-e602
11. Christian CW. Professional education in child abuse and neglect. Pediatrics. 2008;122:S13 â S17