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Simulation and assessment of dental extraction proficiency Type of project : Self Administered Postal Questionnaire

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Teaching Fellowship Award Scheme Guidance on writing the final report

Please read this guidance prior to producing the final report for your Teaching Fellowship Project.

The final report should consist of a brief (1-2 pages) summary of the project and findings, together with a number of more detailed appendices (possibly in the form of conference papers or articles for publication). The summary will be transferred directly onto the Pedagogic Research and Development Database (see www.pedres.net) Please follow the format below as closely as possible to enable this transfer of information.

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Title of project: Simulation and assessment of dental extraction proficiency

Type of project : Self Administered Postal Questionnaire

You may also include appropriate evidence in your appendices, e.g.

Information/letter on ethics approval

Please provide some information about the project, in the format below: (1-2 pages)

Aims of project

This study aimed to determine the confidence of recently qualified Foundation Dentists (FDs) in elements of the dental extraction process and to compare this with the assessment of their Foundation Trainers. Also the study aimed to investigate the foundation dentists' views of their undergraduate training relating to exodontia and any aspects of which they found lacking or alternatively any experiences which they found particularly useful.

Background to project (or context)

The dental extraction needs of the UK population are changing with the development of an elderly dentate generation (McHarg and Kay 2009). The 2009 Adult Dental Health Survey observed that a very significant proportion of older adults will have very complex oral health needs with multiple management issues, due to the effects of high decay rates in the past. (White et. al. 2012). This will lead to an inevitable increase in demand for exodontia for this generation although there is frequently less exposure to exodontia in the undergraduate curriculum today (Macluskey and Durham, 2009). Consequently, an investigation into the suitability of simulated extraction procedures within the curriculum to compensate for the reduced clinical exodontia case-load of today's dental student is particularly pertinent.

McHarg J, Kay EJ. (2009) Designing a dental curriculum for the twenty-first century. *Br Dent Journal* 207(10) P493-7

Macluskey M, Duham J. (2009) Oral Surgery Undergraduate Teaching and experience in the United Kingdom: a national survey. *European J Dental Educ* 13(1) p.52-57

White D, Tsakos G, Pitts N, Fuller E, Douglas G, Murray J, Steele J. (2012) Adult Dental Health Survey 2009: common oral health conditions and their impact on the population. *Br Dental Journal* 213(11) p572

Methods used

The population of interest was the FDs of 2012/13 in the English Foundation Scheme. The sampling frame was participants in the south-west Deanery programme. Ethical approval was obtained and a postal self-administered questionnaire was sent to all FDs (85) and their trainers (85). The questionnaire was piloted with 20 participants from the previous year. FDs were asked to rate their confidence for 22 elements of the extraction process using a 5 point Likert scale. Their trainers were asked to judge their FD's abilities and confidence. FDs were also asked to provide quantitative and qualitative information about their undergraduate experience. Three mailings were carried out at monthly intervals mid-way in the Foundation year.

Results

The response rate was 78% for FDs and 87% for trainers. At least 80% of FDs agreed or strongly agreed they were confident in 12 of 22 elements compared to only 6 for the trainers' assessments of their FDs. However over 80% of trainers felt that their FD's ability reached or exceeded the trainer's expectations of a recently qualified graduate and that their FD was aware of their abilities. Both groups were more likely to indicate confidence for FDs undertaking non-surgical than surgical procedures. FDs indicated that lack of confidence in relation to surgical aspects was associated with a perceived lack of sufficient undergraduate experience in these procedures. This was the most common recurring theme related to undergraduate training. There was evidence of the perception of a high educational value of simulation as a learning strategy for exodontia education. The initial lack of confidence by students when presented with the first clinical dental extraction reinforces the need for alternative teaching and learning strategies.

Quantitative results are summarised on the attached poster and key quotations include the following:

" I felt completely unprepared for my first dental extraction on clinic. I wanted to be able to practise it before the patient arrived but couldn't. I've usually been able to do that with cons. I was really scared." (Foundation Dentist)

" the minor oral surgery sessions in SDLE (simulated dental learning environment) taught us how to make an incision/raise a flap/ remove bone/section roots and finally suture." (Foundation Dentist)

"Pig's heads for raising flaps and suturing was really good hands on experience- Shame I never got to use it practical patients experience" (Foundation Dentist)

" Practising on phantom heads made me more confident in my abilities" (Foundation Dentist)

" Practising on dummy head positioning was very useful" (Foundation Dentist)

"to be honest, I felt sorry for the patient. I should have known what I was doing and I didn't, there's got to be a better way of doing it!!!" (Foundation Dentist)

Suturing on a bit of foam isn't anything like the real thing. Its ten times harder in the mouth!
(Foundation Dentist)

Conclusions

FDs have more confidence than their trainers have of their FDs ability. Confidence of assessment; local anaesthesia; elevator and forceps selection and use; and post-operative advice was high. There is reduced confidence with surgical aspects of the dental extraction process. It was also concluded that simulation has a potential valuable educational role prior to the execution of dental extractions when the student is first on clinic. In addition, there is a potential role for the use of simulated dental educational resources which allow deliberate practice for some aspects of the surgical process that foundation dentists lack confidence. These results will be used to inform the curriculum at our school and further research planned for 2014.

Associated publications (these should relate to the project, and give full reference)

The results have been presented at two dental conferences in 2013:

The Association for Dental Education in Europe (ADEE) and the British Society for Oral and Dental Research (BSODR). A poster is attached along with the ethical approval letter.

Website (if directly connected to the project)

Keywords (one or more if possible – see 'pedres' database for examples)

Dental

Simulation

Self-assessment

Foundation training

Exodontia

Psycho-motor

Surgical skills

Questionnaire

Please forward the final report to teachandlearn@plymouth.ac.uk