A games informed e-learning resource to support clinical reasoning in dietetic education

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Clinical reasoning

• Definition

‘The thinking and/or decision making processes that are used in clinical practice’
(Edwards et al 2004)
Clinical reasoning

• An essential part of dietetic practice.
• As autonomous practitioners, dietitians make clinical decisions about their patients every day.
• Judgements based on straightforward nutrition care are routine for most dietitians.
• Within the University setting, we can equip students with the knowledge they need to advise patients
• However in practice, people’s lives and their problems are complex
So sometimes...

You prepare to waltz with Anton

But end up doing something quite different...
It is 19\textsuperscript{th} October 2012 and you are working in your first post as a band 5 dietitian currently on your renal rotation. You are asked to cover the low clearance renal clinic. The clinic is in conjunction with the nephrologist and pre dialysis sister. The following patient is a new referral to the clinic and you are asked to see him. It is his first appointment at the clinic and he is “shell shocked” as he has been told by the nephrologist he is likely to need renal replacement therapy within the next 12 months. He has attended the clinic appointment alone. He has never seen a dietitian before.
Introducing Pete

• Pete is a Caucasian male, 45yrs old. He has the following diagnosis: - Chronic kidney disease (CKD) stage 4 due to Polycystic Kidney Disease (PKD), hypertension and hyperlipidaemia.

• He lives with his partner and two teenage children who are both away at university. Pete helps to support his children financially. He works full time, running a garage business in the local town. His partner is a child minder and runs her own business from home.
Clinical decisions – straightforward!

• What are Pete’s nutritional requirements?
• Which equations will you use to estimate this?
• Will you take account of Pete’s fluid retention?
• What is his oral intake?
• How are you going to assess this?
• How do these compare?
Other issues....

- **Anthropometry** – Height 1.70m, weight 80.2kg, BMI 27.7 (P states that his body weight usually fluctuates between 77.5 – 80.2 kg).

- His blood pressure is raised

- **Biochemistry** – blood tests taken 2 days prior to the clinic appointment show a raised potassium, creatinine and urea level, and low glomerular filtration rate.
Pete says he was given a leaflet to do with diet and kidneys in the past but admits he ignored it. He is anxious having just seen the consultant and confides in you that he is terrified of dialysis and also the possibility he may not be able to run his business. He is also becoming agitated as his car park ticket is about to run out in the next 20 minutes.
What is your priority?

• Pete has already received a lot of information from the doctor and is “shell shocked” What is your priority when advising P today?

• - weight reducing advice
• - advice on a low protein diet
• - low potassium diet
• - lipid lowering advice
• - no added salt advice
• - advice on all the above diets
• None of these is ‘wrong’, but they are not all appropriate at this time.
• For new practitioners and students, this is complex.....
• They have to develop a five track mind!
• Students need to feel safe
• And so do patients!
• Previous studies have demonstrated the potential for using interactive computer instruction to improve the clinical reasoning skills of dietetics students.
• Exploring different ‘decision pathways’, with the aid of feedback is a useful tool
• As yet, this is unexplored in the UK

• The aim is to develop a series of interactive tutorials, developing in clinical complexity as the student progresses through the course.
• A pilot study was carried out in March 2012 as part of a PgCert(HELT).
• Students were 3rd and 4th stage undergraduate students.
Student feedback

• 100% agreed or strongly agreed that the programme was easy to use
• 100% agreed or strongly agreed that the case study presented was realistic
• 100% agreed or strongly agreed that undergraduate teaching should include more of this type of e-learning resource
Comments

• ‘Would certainly recommend e-learning aids like this example, as it allows students to complete them when at home. It would be useful to have e-learning case studies uploaded on moodle for example a week after completing a lecture on a certain type of condition i.e. type 1 diabetes/artificial nutrition’

• ‘easy to follow. Useful as the scenario seems real which makes it meaningful and easier to remember’.

• ‘this was very realistic of what i encountered on placement and i think that having elearning activities like that before going on placement would have been really useful’.
• To date, software has been identified to support development of this resource
• This is OpenLabyrinth (OLAB)
• E-tutors have been engaged to populate the tool with 6 case studies drawn from real life scenarios (Pete is one of these)
Open Labyrinth (OLAB)

**The Nodes concept**

- VP Narratives as collections of Nodes
- Each node is a choice in the narrative
- A collection of connected nodes becomes a labyrinth
MS Word: Initial Narrative

• MS Word used by practitioners to assemble VP narratives called 'Olabs'

• Shared back and forth with comments
Adding to PREZI

- Used to better collaborate with complex VP narratives
- Contains:
  - At least 1 correct path
  - Many incorrect paths
  - Incorrect paths that loop back
  - Counters that count ‘time’ spent by learner
Prezi: A Simple Node

- A node title
- A single item of text
- An avatar (optional)
- A link to the next node (if no choice)
Prezi: Adding more content

- Images, Tables
- Multimedia items
  - PDF
  - Audio
  - Video
Node with multiple options

- Nodes are linked to other nodes which form the narrative
- Multiple options lead to multiple paths, hence labyrinth
- Learners goal is to navigate the labyrinth
OpenLab Editor

- Final design stage of an Olab
- Graphical links drawn automatically create node pages
- Further text is added direct to the node pages
- Final avatars, images and media added
Avatar Editor

- Used to create characters
- Can change:
  - Gender
  - Clothing
  - Background
  - Glasses etc.
In clinical reasoning,

‘..expertise is a journey rather than a point of arrival’
Higgs et al 2008

This tool reflects this statement, and allows the student to practice safely and at their own pace.

Future developments would reflect Interprofessional learning and would develop in complexity, making them suitable for use as CPD by experienced practitioners.