The Evaluation of Training Oral and Maxillofacial Trainees in Head and Neck Cancer Doctor-Patient Communication Using the Patient Concerns Inventory

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ABSTRACT

Head and neck cancer has a significant impact on a patient's health related quality of life (HRQOL). The head and neck specific Patient Concerns Inventory (PCI-HN) has been utilised to enhance doctor-patient dialogue in routine consultations. To date there has been no formal training for oral and maxillofacial surgery (OMFS) surgical trainees in the use of the PCI-HN in consultations. The aim of the study was to evaluate training for OMFS surgical trainees in the use of the PCI-HN, using simulated follow-up HNC consultations, in order to improve doctor-patient communication skills.

Material and methods: Ten oral and maxillofacial surgical trainees completed actor simulated HNC consultations before and after training. A study-specific mark scheme was developed based on the ComOn-Coaching rating scales and used to score the doctor-patient interaction. A group debrief afterwards explored the trainee's experiences of the training and consultations.

Results: All trainees showed an improvement in doctor-patient communication scores following their training. Overall, the six participants who were Specialty registrars, year 3 (ST3) or above, scored higher, than the four Specialty registrars, year 1–2 (ST1-2). The scores were higher if fewer PCI-HN items were discussed (3–4). The most frequently avoided PCI-HN items were intimacy and relationships. The trainees considered that their training was useful for organising their consultations and for providing holistic care.

Conclusion: Although training improved surgeon-patient communication, further evaluation is required with a larger number of trainees and actual consultations in clinic.

KEYWORDS

head and neck cancer; clinical training; Oral and Maxillofacial; Patient Concerns Inventory; surgeon-patient communication

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INTRODUCTION

Health related quality of life (HRQOL) is severely impacted by the diagnosis, treatment and recovery from head and neck cancer (HNC) (1, 2). HRQOL encompasses not only physical/functional, emotional and social areas but also includes more existential considerations such as well-being, purpose and spiritual elements (1). For HNC patients, effective doctor–patient communication in consultations is of critical importance. Good patient-centred communication can reassure, provide for sharing of information, increase adherence to management plans, lead to better patient satisfaction and improve outcomes (3–5). The Royal College of Surgeons has identified effective communication with patients as a key domain in providing Good Surgical Care (6).

The PCI-HN is an established prompt tool to help elicit patient concerns in routine HNC consultations (7); it is a 56-item prompt list completed by patients prior to their HNC consultation. The PCI-HN was first published in 2009 (8), and has been shown subsequently to be feasible as a cost-effective tool that improves health-related quality of life outcomes (9, 10). The PCI-HN helps empower patients by providing a holistic tool that allows them the opportunity to raise issues they wish to talk about in their consultation (9). The possibility of the PCI-HN increasing the duration of consultations, especially in busy routine clinics, has been perceived as a potential barrier to its use by clinicians. In fact, when used by consultants, the PCI-HN made little difference to consultation length, if anything, tended to reduce it slightly overall (11).

An essential aspect of using the PCI is effective doctor-patient communication that has a patient-centred approach. This approach to consultations requires a doctor to communicate in an individualised and holistic style that is respectful and empowers the patient (12). A patient-centred focus has been shown to improve functional outcomes and HRQOL, patient satisfaction, increased adherence to management plans and perceived quality of care (13). There is recognition by oral and maxillofacial surgeons (OMFS) of the importance of further training in doctor-patient communication for HNC consultations (14). There has been no specific training for OMFS trainees in the use of the PCI-HN in HNC consultations, so we developed a novel training intervention.

The aim of the study was to evaluate the efficacy of specific doctor-patient communication skills training for OMFS surgical trainees in the use of the PCI-HN during simulated follow-up HNC consultations. We also explored the trainee's experiences of the training and consultations.

MATERIAL AND METHODS

OMFS specialist registrars across all years of training were recruited during their allocated Deanery study day which provided the training. Approval for the study was obtained from the Yorkshire Deanery. Participation in the study was voluntary and all ten registrars provided consent for audio-visual recording and were included in the study.

The training intervention had four phases:

1. Consultation with a simulated HNC patient (Scenario A or B). This provided an opportunity for the trainee to communicate in their 'normal' style.
2. A focused interactive session was led by the OMFS consultants (SR, and AK). This session consisted of (a) a discussion of the trainee's challenges concerning doctor-patient communication during follow up HNC consultations (b) a video of the use of the PCI-HN and doctor-patient during a simulated follow-up HNC consultation (c) a discussion of the importance of

A	Establish doctor-patient relationship	0	1
B	**Agenda Setting**		
	Prioritise patient choice of items for discussion	0	1
C	**Empathic communication**		
	Encourage patient's expression of thoughts and feelings	0	1
	Validate patients' thoughts and feelings	0	1
D	**Information giving**		
	Clear explanation to patient about their concern	0	1
	Awareness that patient understands explanation	0	1
E	**Action planning**		
	Provide opportunity for shared agreement on management plan	0	1
F	**Wrap up**		
	Check that all patient's concerns have been addressed	0	1
	Provide arrangements for follow up	0	1
G	Overall consultation organised and structured	0	1
	Total score		

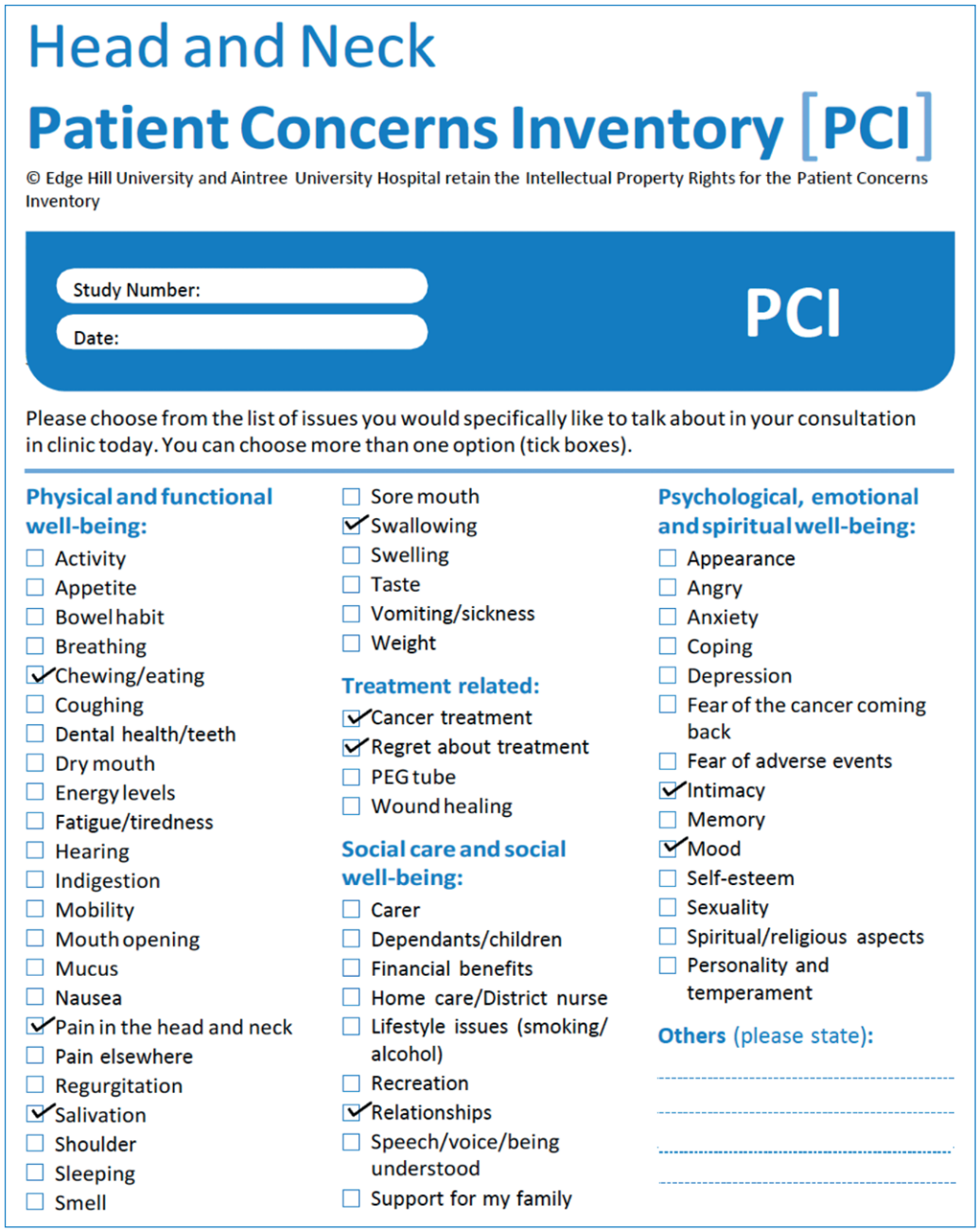
Fig. 1 The study-specific mark scheme utilised to score simulated consultations (0 = absent, 1 = present).

doctor-patient communication with a patient-centred focus and (d) a discussion of the experiences of the consultants in the use of the PCI-HN and doctor-patient during follow-up HNC consultations.

3. Two consultations with a simulated HNC patient (Scenario C or D, followed by Scenario E or F).
4. Group debrief to allow trainees to reflect and consolidate learning from the day.

The simulated patients throughout the training day were professional actors with previous experience of undergraduate medical exams. Prior to the study day, these actors underwent virtual training in the specific needs of HNC patients, which included teaching from OMFS Consultants and real-life patients. For each Scenario, there was a specific detailed script for the simulated patient (Appendix-Scenarios used) and this included a relevant completed PCI-HN to identify the patient's concerns. All consultations were video-recorded, and the doctor-patient communication was analysed using a study specific mark scheme (Fig. 1, developed by JS and EW). The ComOn-Coaching rating scales (15), which provides a short and reliable instrument for the assessment of real consultations in oncology and is sensitive to change by training in doctor-patient communication, was adapted to align with a widely-used consultation model used in the UK (16).

Each video was scored independently by two markers and any differences were resolved by discussion to achieve consensus. The group debrief was audio-recorded and transcribed. The transcripts were coded by template analysis to identify the key themes, with illustrative quotations (17). The transcript was independently analysed by two researchers and any differences were resolved by discussion to achieve consensus.



Head and Neck

Patient Concerns Inventory [PCI]

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Study Number:

Date:

PCI

Please choose from the list of issues you would specifically like to talk about in your consultation in clinic today. You can choose more than one option (tick boxes).

Physical and functional well-being:

- ☐ Activity
- ☐ Appetite
- ☐ Bowel habit
- ☐ Breathing
- ☑ Chewing/eating
- ☐ Coughing
- ☐ Dental health/teeth
- ☐ Dry mouth
- ☐ Energy levels
- ☐ Fatigue/tiredness
- ☐ Hearing
- ☐ Indigestion
- ☐ Mobility
- ☐ Mouth opening
- ☐ Mucus
- ☐ Nausea
- ☑ Pain in the head and neck
- ☐ Pain elsewhere
- ☐ Regurgitation
- ☑ Salivation
- ☐ Shoulder
- ☐ Sleeping
- ☐ Smell
- ☐ Sore mouth
- ☑ Swallowing
- ☐ Swelling
- ☐ Taste
- ☐ Vomiting/sickness
- ☐ Weight

Treatment related:

- ☑ Cancer treatment
- ☑ Regret about treatment
- ☐ PEG tube
- ☐ Wound healing

Social care and social well-being:

- ☐ Carer
- ☐ Dependants/children
- ☐ Financial benefits
- ☐ Home care/District nurse
- ☐ Lifestyle issues (smoking/alcohol)
- ☐ Recreation
- ☑ Relationships
- ☐ Speech/voice/being understood
- ☐ Support for my family

Psychological, emotional and spiritual well-being:

- ☐ Appearance
- ☐ Angry
- ☐ Anxiety
- ☐ Coping
- ☐ Depression
- ☐ Fear of the cancer coming back
- ☐ Fear of adverse events
- ☑ Intimacy
- ☐ Memory
- ☑ Mood
- ☐ Self-esteem
- ☐ Sexuality
- ☐ Spiritual/religious aspects
- ☐ Personality and temperament

Others (please state):

.....

.....

.....

.....

Fig. 2 An example PCI sheet utilised by actors and trainees during this study day.

STATISTICAL ANALYSIS

The overall scores were summarised and presented as mean and standard deviation (SD), by scenario, training level and number of PCI-HN items. To investigate the impact of factors on the overall scores, linear mixed effect models were conducted using the overall scores as the dependent variable, including scenario, training level and number of PCI-HN items as independent variables. A random intercept was included to adjust for clustering effect within each trainee. Five modelling strategies were employed to assess the effect for a combination of the three factors. The coefficient estimates along with 95% confidence interval were reported from each modelling strategy. R version 4.0.3 was used for data management and analysis.

RESULTS

A total of ten trainees took part in this training day, four of whom were ST1-2, the remaining six were ST3 or above. Table 1 and Figure 3 summarise the overall consultation scores, categorised by scenario utilised, level of training and number of PCI-HN items discussed during the consultation. These results show improved scores for all trainees in scenarios following PCI-HN training (scenarios C, D, E or F). Trainees at a higher level of training (ST3 or above) also had higher scores overall. In general, those consultations where fewer PCI-HN items were explored (3–4) resulted in higher scores than those where more PCI-HN topics were covered (5–6).

The primary outcome of overall consultation score was analysed using a linear mixed effect model including factors such as scenario, training experience and number of PCI-HN items covered. The model included participants as a random intercept to adjust for clustering effect due to participants taking part in multiple scenarios. Each of these three factors has been included in a separate model, and combined factors were investigated to assess potential impacts on overall score. The results show scenarios D, E and F resulted in higher scores in comparison to scenario A. Scenario B and C also showed improvement in comparison to scenario A, but the difference was not statistically

Tab. 1 Demonstrates overall scores categorised by scenario, training level and PCI items covered.

	Number of participants	Total score (%) (SD)
Scenario		
A	5	73.2 (19.7)
B	7	74.4 (11.5)
C	5	81.2 (12.6)
D	6	85.8 (9.6)
E	5	83.7 (8.1)
F	7	84.2 (7.5)
Training level		
Below ST3	12	75.9 (6.2)
ST3 or above	23	82.8 (13.6)
Number of PCI items		
3 or 4	12	85.6 (12.7)
5	15	77.2 (12.4)
6	8	78.7 (7.9)

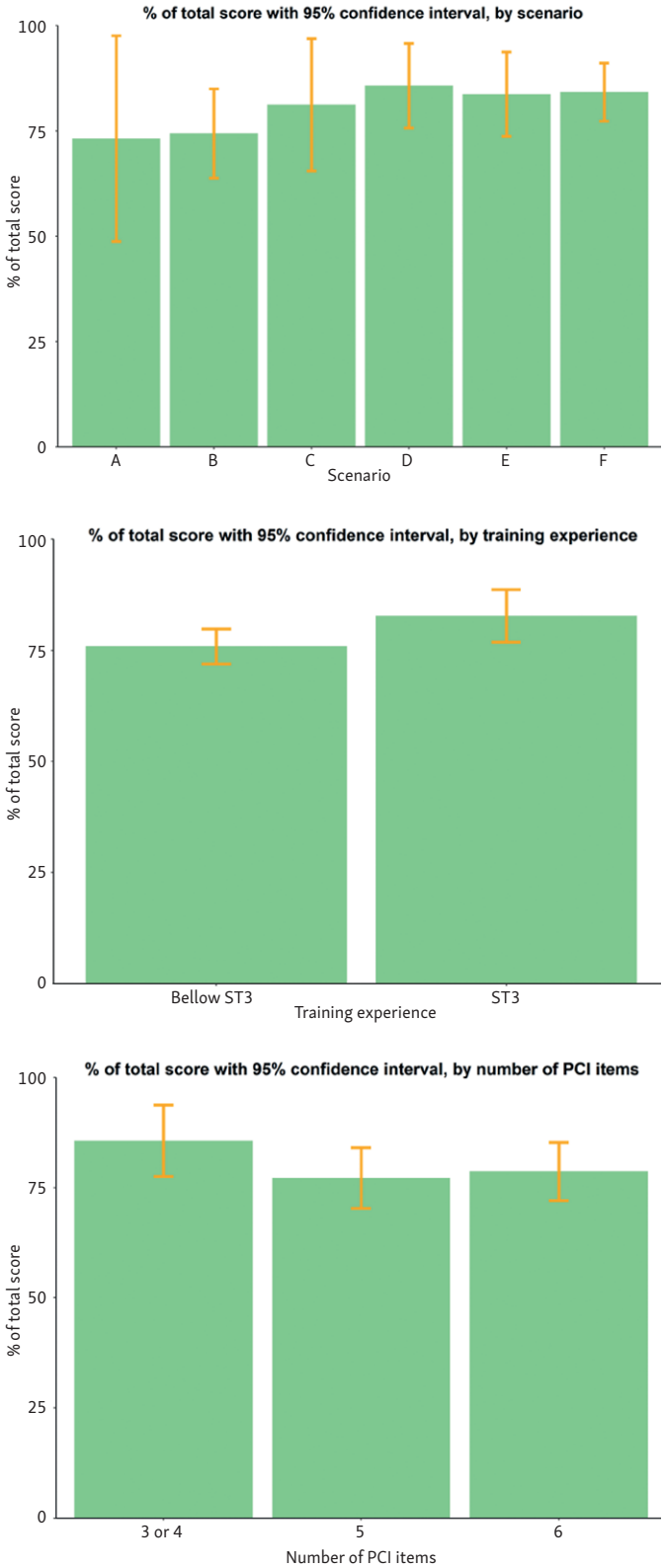

Fig. 3 Demonstrates overall scores categorised by scenario, training level and PCI items covered.

Tab. 2 Coefficient estimate from different modelling strategy using linear mixed effect model.

	Coefficient estimate (95% CI)				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Scenario					
A	Reference	Reference	Reference	Reference	Reference
B	3.6 (-6.9, 14.1)			4.0 (-6.6, 14.6)	1.2 (-10.0, 12.4)
C	7.8 (-2.9, 18.5)			8.2 (-2.5, 19.0)	10.2 (-1.1, 21.5)
D	15.1 (4.4, 25.9)			15.4 (4.6, 26.2)	15.7 (4.7, 26.8)
E	13.5 (2.8, 24.1)			13.8 (3.1, 24.5)	17.4 (5.0, 29.8)
F	13.6 (3.4, 23.8)			13.7 (3.5, 23.9)	10.9 (0.03, 21.7)
Training					
Below ST3	Reference	Reference	Reference	Reference	Reference
ST3 or above		5.9 (-4.3, 16.2)		6.0 (-4.8, 16.8)	3.8 (-6.5, 14.1)
Number of PCI items					
3 or 4	Reference	Reference	Reference	Reference	Reference
5			-4.7 (-13.9, 4.5)		-6.4 (-15.6, 2.9)
6			-3.0 (-13.4, 7.4)		-9.9 (-22.0, 2.2)

significant due to the small group of participants involved (see Table 2).

The most frequently avoided items discussed during these consultations were intimacy (5) and relationships (4). Whilst work and finance (3) and pain or recurrence (2) were also avoided. Overall, 54.3% (19 of 35) scenarios had no avoided items. The simulated patients were instructed to discuss all items highlighted on their PCI-HN agenda, meaning lack of items discussed was resultant of trainees' navigation of the conversation.

The key themes identified by the group were:

(a) The PCI-HN had an impact on the trainee's organisation of their consultations:
"My initial station was kind of here and there and then you kind of pick up, you know, an organised way of how to speak to the patients and address their concerns so I felt much happier after."
"Yeah, I felt I struggled, actually. Well just because there was [sic] about 12 ticks and I was trying to .... One in the afternoon I said ok, well, there is quite a lot here we will try and get through as many as we can what are your priorities and so on."

(b) The training increased trainee's awareness of the importance of doctor-patient communication, especially patient-centredness and holistic patient care:
"I had not thought about the way patients perceive things before ..."
"There is a very practical nature to doing that clinic. I think today is useful because it has reinforced all the other factors around it for some it's social and relationships."
"We don't often explore those avenues of why particularly do you think that and how do you think that so I don't know how much my patients have been missing out to be honest."

(c) The experiences and anecdotes of clinicians who regularly use the PCI-HN during doctor-patient communication was greatly valued by the participants:
"I liked the story about the shoes ... he said that there was a patient who was concerned about their appearance, bought some shoes which made them feel better about themselves and I think I had not thought about the way patient's perceive things that perhaps changing their clothes could have a big impact on them."

DISCUSSION

All trainees benefited from the training, not only in consultation scores but, as revealed by the group debrief session, in an appreciation for patient concerns and how clinicians should work with patients in shared decision making about their treatment and cancer care. As expected, those further into their surgical training (ST3 or above) had a higher baseline and post-training consultation scores than more junior colleagues. This mirrors research with general surgery residents in the United States (18), and demonstrates that some background doctor-patient communication skills are learnt during surgical training regardless of specific training. However, consistent education throughout surgical training years can allow individuals to focus on different aspects of communication through time with a layered learning approach. This work provided a basis for consultation training in surgery, and it is the first time that the PCI-HN has been included in this setting.

Our study has revealed that the most frequently avoided PCI-HN items were intimacy and relationships. It is well reported that one third of patients suffering with HNC have reduced sexual interest or enjoyment after treatment (19) and specific intimacy questionnaires exist to quantify the impact on HRQOL of these concerns in HNC (20).

Lack of clinicians' knowledge about how to respond to questions regarding these topics may be to blame for the avoidance of discussion, including signposting to appropriate services. Highlighting available resources within clinics and ensuring surgeons are trained in discussing these personal items could minimise the long-term impact of these concerns and result in improved HRQOL of HNC patients and their families.

There are limitations that we must keep in mind when interpreting the results. The study included OMFS trainees from only one region (Yorkshire) and actors with different levels of experience during the simulated medical training. The study was relatively small and lacked statistical power to distinguish small differences; the actors had no previous experience with the use of the PCI-HN and it is possible that they tried to make the consultations more challenging for the trainees. Additional preparation for the mock consultations with the actors, and refinements to their simulation, would help provide a more realistic model.

The use of consented patients is worth exploring as they might provide a more accurate representation of the doctor-patient interaction. Future inclusions of trainees from other regions and specialties (including Ear, Nose and Throat surgical trainees) will allow for the development of specialty-specific training packages. It is an expectation that surgeons early in their consultant career possess a range of skills for communicating in doctor-patient consultations. Methods for assessing interpersonal communication include checklists, patient surveys and examinations (21). Checklists can be used in assessment of interactions with real or simulated patients (21). The PCI-HN has been validated in head and neck cancer patients and may provide specialty-tailored consultation training (9). Simulated clinics with real patients have been used for a long time in general practice (22) and may assist with the development of communication skills. This approach is still underdeveloped in surgical training.

The score of consultations with multiple PCI-HN items were lower than those with fewer PCI-HN items. When patients present with multiple issues, the doctor-patient interaction can be challenging. In patients with a history of treatment for head and neck cancer, there is no consensus on how to manage these challenging interactions. The General Practice policy of one issue per consultation may increase levels of stress and anger, which in turn will impact on communication (23). The trainees felt that the PCI-HN gave them an opportunity for an 'upfront agenda setting' that allowed both parties to agree to address the most important issues within the time constraints.

The PCI-HN training hosted by experts in the field during the study day incorporated example video consultations with model PCI-HN use, the opportunity to discuss tactics for its use and anecdotes of successful implementation. A mixture of didactic teaching, visual resources and informal seminars allowed those with different learning styles to benefit from the session. Formalisation of video resources into 10-minute consultation appointments and the opportunity to receive one-to-one real time feedback were areas trainees highlighted for possible improvement during the study day.

Whilst the PCI-HN was developed within Oral and Maxillofacial Surgery (OMFS), it is being adapted and developed for use in other specialities including Ear, Nose and Throat (ENT) and Oncology. To ensure maximum benefit to patient and clinicians, appropriate training in its use and guidance, from senior clinicians already using the toolkit, is invaluable.

CONCLUSION

In terms of improved holistic consultations for HNC patients, both the PCI-HN and the PCI-HN specific simulated training have clear merits. Not only does the training give trainees the ability to effectively use the PCI in practice but also it provides a broader view of the patient's perspective. In future, training days within further surgical specialities can be modelled from this event.

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APPENDIX – SCENARIOS USED

SCENARIO A

48-year-old, female, operating theatre nurse assistant, working in the hospital and mother of three kids from 8–14 years old.

Past medical history:
- Asymptomatic multiple sclerosis.
- 2 years post-treatment for right maxillary sinus adenoid cystic carcinoma. This was excised with positive nerve margins and had radiotherapy. Following that she had wound breakdown and had 3 operations for reconstruction including a free flap. Following that she had right eye enucleation following poor healing and eye problems. She now wears a prosthesis.

In the clinic for her 3 monthly reviews, for cancer surveillance.

She is very concerned about cancer coming back, especially since she has an area of fluid discharge under the eye prosthesis. Recently her husband and family noticed her low mood and they feel she is depressed.

She is very worried about financial issues (especially since her kids are getting older).

She is still very angry that she was misdiagnosed by her GP and that delayed her treatment.

SCENARIO B

53-year-old male, leaves with partner, worked as a bank manager in full-time work.

Past medical history:
- 8 months post-surgical treatment for maxillary squamous cell carcinoma. Had a low-level maxillectomy and an obturator.

In clinic for his monthly cancer surveillance appointment.

He is very worried about his weight. He is unable to eat-his poor-fitting obturator is painful.

Also, when he is at work, drinks will come out of his nose. His voice is different, and this is very embarrassing for him. He had to leave from his workplace last week because he could not face his clients.

He wants to know if he had the right treatment and if his problems with the obturator can be solved in the clinic.

The specialist nurse mentioned that he told her he is struggling to sleep.

SCENARIO C

62-year-old retired engineer, married with 3 adult children. Lives with his wife.

Past medical history:
- Diabetic-well controlled.
- Hypertension on regular medication.

2 months ago – had extensive mandibular resection and reconstruction with fibula free flap and immediate implants.

This is his first clinic appointment after hospital discharge.

Problems:

His teeth feel different – as his 'bite' has changed.

Worried that his new bone has moved from the initial position – He 'knows' that for sure as he used to be an engineer.

Also, his left leg (donor site for fibula) – feels heavy. There is bleeding/smell/ discharge on his leg dressing – His community nurse told him that he has a leg infection.

He liked to go for a walk but he feels very tired now.

He wants to know when he will have his 'teeth' back – upset as he seems to be waiting for a long time.

SCENARIO D

66-year-old male. Retired long-distance driver, married and lives with his wife.

Past medical history:
- Haemophilia.

4 years ago, he had floor of mouth cancer treated with bilateral neck dissection, reconstruction with free flap and post-operative radiotherapy.

He has extensive osteoradionecrosis and had several debridement operations.

In clinic for his 4 monthly cancer surveillance appointment.

Problems:
Hole on his neck with communication with his mouth. Pain that needs regular morphine. Unable to eat solid food. Heard a noise and his jaw seems to be moving. Jaw shifted to the left. Food and saliva are coming through his neck.
He is angry that the cancer treatment destroyed his quality of life. He is unable to eat out. Does not enjoy his food and he is unable to swallow. He feels that life is not worth living now. Worried that his wife cannot cope with him, and he is concerned about his marriage. He feels that he cannot be intimate with his wife anymore, but he is embarrassed to discuss it.

SCENARIO E

32-year-old male, University lecturer, leaves with his male partner for the last 8 years.

Past medical history:
- Right tongue cancer was treated 9 months ago with surgery, neck dissection, free flap reconstruction from his left thigh and post-operative chemoradiotherapy.

In the clinic for his monthly cancer surveillance appointment.

Problems/concerns:
Still unable to eat, can only manage small pieces of solid food. Does not feel ready to go back to his university work. He is worried about his speech. He is very worried that he will not be able to lecture again and that he will not be able to go back to work. With his partner, they bought a house and worried about the mortgage payments.
He read that HPV cause cancer and wants to be tested for that. He is worried that his male partner may get cancer too.
He loved swimming but his shoulder stiffness is a problem. Wants to know what can be done.
He is not a smoker or drinker and wants to know why he had cancer. Worried that the cancer will come back.

SCENARIO F

42-year-old lawyer and mother of two young daughters. Currently off work.

Past medical treatment:
- Kidney transplant when she was 36 on immunosuppression (tacrolimus).
- 9 months post-treatment for gingival cancer. She had surgery with teeth extractions, neck dissection and postoperative radiotherapy to her neck.

In the clinic for her monthly cancer surveillance appointment.

Problems/concerns:
The neck scar feels tight and painful during the cold weather. Likes to cover it. Does not like the look of it – it reminds her of 'the cancer'.
Had clinical psychology input but worried that she will not see her daughter going to university. Has 'no-one' to talk to about that and her family does not seem to help her.
Worried that it was the spicy food (as she is of Indian origin) that caused her cancer.
She wants to know if she can have 'gene testing' – she read that cancer is hereditary and wants to 'prevent' her kids from getting cancer.