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The benefits of an innovative community engagement model in dental undergraduate education

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ABSTRACT

Dental healthcare students at the Peninsula Dental School, University of Plymouth, UK undertake community engagement projects as a core part of their undergraduate curriculum. Students work with their peers to develop a student-led, evidence-based project working with target groups in the local community to address oral health needs. The aim of the programme is to further the students' understanding of health inequalities and the health needs of different groups in the community, while developing skills that will help them deliver holistic dental care as part of their future professional practice. This report highlights our model of education delivery in collaboration with the community, the student-learning outcomes and discusses some of the benefits of this approach including examples of projects that have benefitted the community. We highlight the further work needed to evaluate the longer-term impacts on students of undertaking social accountability programmes.

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Introduction

As part of the curriculum at Peninsula Dental School, University of Plymouth, dental healthcare students undertake a community engagement module. The module gives students the opportunity to work directly with members of the community, who commonly experience health inequalities and poor oral health, and to develop and deliver an intervention adapted to needs of the group they work with. The purpose is to provide students with insight into the health and wellbeing of various population groups and to promote 'social accountability' as a key part of professional practice.

The concept of 'social accountability' is one that is gaining increasing prominence in healthcare education in recognition of the widening gap between health inequalities and the workforce available [1]. In response, medical and dental schools in the UK and internationally are exploring ways of developing social accountability programmes to deliver on these objectives, however there remains a lack of evidence of the impact [2]. In dentistry, this has prompted calls for dental schools to optimise the delivery of such programmes and connect students more authentically with local communities enabling them to develop greater awareness and responsibility towards health inequalities [3].

The aim of this report is to present key features of a social accountability programme that has been

delivered for over ten years as part of core curriculum, highlighting the student associated learning, case studies demonstrating impact and recommendations for future research and evaluation.

Description of the module

The UK General Dental Council 'Preparing For Practice' document requires dental schools to ensure that health promotion and disease prevention are included in undergraduate curricula, with an expectation that dental undergraduates understand the principles of both these learning outcomes in order to register as a dental professional [4].

In response, Peninsula Dental School has developed a community engagement model centred on social responsibility and professional engagement [5] to address these objectives in a way that provides students with a deeper understanding of community groups they may work with in the future. The model is based on adult learning theory [5] and students build their experiences by working with each other in peer learning groups and with an allocated host community organisation. Importantly, students are not directed to an answer – they are expected to investigate the oral health problems in their community group by directly engaging with communities and are expected to design an

intervention to address those issues using evidence to justify their decisions. This might involve exploration of the impact of dental disease in the community, exploring barriers to care or investigating the complexities of oral health needs in vulnerable groups. Each group has a tutor responsible for ensuring the project satisfies clinical governance standards and is ethically appropriate to the target group. We encourage students to use the Ottawa Charter [6] for health promotion to ensure projects are delivered in line with best practice. In addition, any oral health advice provided to organisations and individuals is evidence-based on Delivering Better Oral Health [7] and students use guidance for Making Every Contact Count (MECC) in their engagements [8].

The module seeks to improve students understanding of public health issues and the impact of health inequalities. It also provides experiential learning opportunities to enable them to develop their clinical and inter-personal skills in a non-clinical setting, and to reflect on the role of oral healthcare as part of the wider healthcare needs of individuals and community groups. In their small groups, students visit and work with their host organisation to develop an understanding of how the organisation supports individuals, clients and service users. Using this knowledge, students work in partnership with the organisation to co-design and deliver an intervention focused on improving oral health and wellbeing, whilst being mindful of the social and organisational barriers that prevent many people in society from achieving this. Their activities are proportionately targeted to areas of deprivation, vulnerable groups and to where oral health inequalities exist working to local public health priorities [9].

Learning outcomes

The module maps to 59 of the 152 learning outcomes in the GDC document ‘*Preparing for practice*’ and gives students a wider range of skills and experiences to draw upon [2]. Key learning outcomes covered include:

- Increasing understanding of the role of health promotion and prevention messages in a rapidly changing health environment;
- Broadening knowledge to enable students to be able to explain the principles of planning health care for communities to meet needs and demands, whilst understanding societal barriers experienced within communities;
- Raising awareness of skills required to deliver a community-based intervention, including the

importance of communication, team and partnership working; measuring impact and evaluation;

- Connecting personal reflection through experiential learning to improving personal future clinical practice.

Alongside the community-based activities, students undertake facilitated peer learning sessions where they are able to discuss their learning experiences, reflections on those real-world experiences and consider the impact of their work on the community, and the implications for their future professional practice. Student learning outcomes are formally assessed through a poster presentation, reflection and an end of year symposium where students are able to share their work with their peers in a community of practice.

Examples of community impact

Each year approximately 70–80 students work in small groups to deliver a project with host organisations from a wide range of backgrounds. Target organisations may include organisations supporting vulnerable population groups such as the Salvation Army, British Red Cross, Age UK, housing associations and charities, or focus on families and children through support services such as the Family Nurse Partnership or in Early Year’s education settings.

Student-led projects often act as pilot projects which are used to support new community programmes and/or applications for external funding to address gaps in oral healthcare identified through their engagement, and a number of successful services have grown out of student activity [10–12] thus creating projects and programmes, which benefit communities in the longer term. A rolling programme of evaluation and research sits alongside the student activity and which aims to evaluate the impact, particularly focused on improvements in access to oral healthcare for socially excluded groups, a key measure of success for community engagement. One such example is the establishment of a dedicated dental service for people experiencing homelessness, which was initially developed by dental students through their work to highlight the stark oral health needs in this group in the locality. Evaluation of the *de novo* service has demonstrated a mutual benefit to patients and students alike, with a transformational effect on many patients’ lives [12] and positive benefits to students through improved awareness, confidence and attitudinal changes towards people experiencing homelessness [11].

A project involving students working alongside adults with learning disability has led to an established

Table 1. Contact matrix with host names removed (academic year 2019–20).

Contact Matrix 2019–2020	Breakdown of contacts					Total Contacts
	Target Audience				Staff and Support Workers	
	0–5 Years	6–11 Years	12–18 Years	Adults		
Primary School		180			13	193
Barnardos	25	0	0	25	4	54
Improving Lives Charity				25	4	29
Advice and signposting service for vulnerable adults			5	6	3	14
Family Nurse Partnership					5	5
Befriending service for older persons				27	4	31
Community nursing team				18	24	42
Library Service	8	6		24	3	41
Health Champion Service linked to a sports team		30		8	12	50
Centre for Special Educational Needs			30	10	6	46
Disability Charity				6	1	7
						Total Contacts 2019–2020
						512

peer-led dental ambassador training scheme promoting oral health awareness and self-care in this population group. The student work has since been adopted and expanded by a local oral health charity [13], and the programme is recommended as best practice by Public Health England [14] demonstrating considerable impact and sustainability beyond the requirements of the student curriculum. A further example is the development of a communication-aid for stroke survivors with aphasia. The tool was created by students working with the Stroke Association and support groups [15], to empower patients to have a ‘voice’ and improve communication in the dental setting.

The above examples provide an illustration of the type of projects students deliver and in a typical year there can be a significant number of community engagements (Table 1).

Evaluation

These experiences offer contextual learning opportunities, which can help students to understand patients’ complex health needs in a ‘real’ environment and from a different perspective [11,16]. In addition, students report they contribute to their development in wider leadership, professionalism and communication skills [11,15,17]. Fully evaluating the dual impact and benefits to student learning and to the community is challenging due to the varied nature of the student outreach work and the number of stakeholders involved, which would require significant long-term funding to identify education and health outcomes, a challenge of any public health programme [18]. To overcome this, comprehensive routinely collected student feedback data (see Table 2) sits alongside an action research model, which has been developed in parallel to evaluate specific

community aspects of the programme and some of the aforementioned exemplar projects.

Early work exploring the impact to student learning has revealed that students report the programme benefits them in many ways, for example, increasing confidence, team work, greater understanding and ability to manage patients effectively, and working with other health and social care professionals to develop inter-professional practice [11,15,17,19]. In particular, students have reported impact on their communication skills enabling them to improve interactions with patients through enhanced practical skills and experience [17]. This supports students in their transition to clinical placements and often provides them with much needed experience ahead of their first patient encounter.

Routine data collected from students each year indicate the module provides transformative learning, bridges the gap between theory and practice, produces demonstrable mindset and attitudinal changes, increases engagement levels and allows for personal reflection and growth [16]. This data collected over the ten-year period has consistently reported benefits to student learning and education across the themes described.

“Delivering our intervention to parents with children who have special education needs and disabilities was eye opening in terms of how we need to provide holistic care to all our patients. It’s really made me think more about inclusion, and has encouraged me to put more effort into thinking about what I can do as a dental practitioner in the future to make dental access for these more vulnerable groups easier.” (Dental student).

“This experience has changed my clinical practice to be more adaptable, considerate and kind.” (Dental therapy student).

A recent study using audio-diary methodology investigated the critical reflection moments and shifts in

Table 2. Student (n = 67) reported outcomes (academic year 2019–20).

88% report increased awareness of population health issues and social inequalities at a community level
99% report they now understand how inequalities and health issues can influence health and wellbeing
67% report now feel confident to work as a team with new people
87% report now feeling confident to work and engage with community outside of clinical environment
87% report they now know how to project plan and deliver a successful community engagement intervention
93% felt they would change their practice and patient management as a result of this module

thinking of medical and dental students undertaking the social accountability programmes at the University of Plymouth [19]. The investigators concluded that the programmes provided a valuable teaching intervention and reported that students across both degree programmes frequently used language such as ‘*eye-opening*’, being ‘*surprised*’, ‘*shocked*’ or ‘*made to think*’ [19]. The authors describe a common set of themes to learning and describe how challenging moments facilitated student learning, as did experiencing negative emotions [19]. Despite a small cohort of participating students, these findings are encouraging and support the concept that outreach into communities is a valuable asset in undergraduate health-care education. As far back as 2010, Nandakumar and Robinson [20] highlighted the missed opportunity of dental schools to utilise outreach to help students learn about the social determinants of health. With renewed interest in this topic, we are working with other institutions interested in this approach and strengthening our action research model with a formal evaluation of student-derived outcomes.

Conclusions

Providing flexible community-based learning opportunities as part of the undergraduate curriculum can help to align healthcare education with the needs of local communities in a way that is beneficial to both students and addressing health inequalities through targeted community engagement. There is potential to advance this education model further into other health disciplines. Further research is underway to evaluate the impact of inter-professional education in the dental curriculum on students’ views towards social accountability.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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