

Early clinical exposure: Dental student feedback regarding the first two years of study

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Background. Early clinical exposure is a contemporary curriculum intervention, implemented to provide dental students with context early in the curriculum. The true efficacy of early clinical exposure as a pedagogy remains in question as it relates to increased curriculum load with ensuing stress and anxiety among students.

Objective. This evaluation aimed to gauge dental students' perceptions of the first two years of a dental curriculum that included early clinical exposure as an intentional intervention.

Methods. Narrative essays written by 2018 second- to fourth- year dental students ($n=100$, 56% representation) at the School of Dentistry, University of Pretoria in South Africa regarding their experience of the first two years of study were qualitatively analysed using a thematic approach with accompanying percentage distributions. Students were asked to provide both positive and negative feedback. Ethical clearance was granted by the University of Pretoria (ref. no. 543/2017).

Results. Positive feedback included praise for earlier exposure to dentistry (28%), with increased relevance (15%) that contributed to personal growth (12%) and professional development (11%). Negative feedback included that the curriculum contained irrelevant information (18%) and a challenging and intense scope (13%), which felt overwhelming (6%) and contributed to a difficult and stressful experience (15%). Fourth-year students with clinical experience suggested a need for an increased amount of early clinical exposure (4%).

Conclusion. Early clinical exposure seems beneficial in the local context. Curriculum transformation should, however, focus on identifying and eliminating unnecessary and irrelevant content to create a balanced curriculum that is conducive to optimal learning.

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Early clinical exposure in health science curricula is an approach whereby students are exposed to patient contact from their first year of study, with the aim to provide students with a contextual basis to their field of study.

^[1] The literature suggests that early clinical exposure has both benefits and challenges.^[2] Early clinical exposure provides the basis for theoretical learning in the basic medical sciences^[2] and enhances learning in a biopsychosocial context.^[1] Early clinical exposure also enhances horizontal and vertical integration in the learning process^[3] and facilitates the early development of interpersonal skills among students.^[2] A drawback of early clinical exposure, however, is that it may be a source of increased curriculum load, adding pressure on student performance.^[2] Overloaded curricula may impede learning by contributing to stress and anxiety.^[4] These types of mental health issues have been observed among dental students.^[5]

The implementation of early clinical exposure as a curriculum intervention is widespread, but the true impact of early clinical exposure remains a question.^[6] Students are key stakeholders in the curriculum review process.^[7] Therefore, a need exists to evaluate curriculum reforms, such as the implementation of early clinical exposure, by taking student feedback into account.^[8]

Objective

The aim of this evaluation was to record the positive and negative feedback from dental students' on their first two years of a dental

curriculum which intentionally included early clinical exposure as a teaching and learning strategy.

Methods

Institutional context

The study was conducted at the School of Dentistry, University of [removed – author please add], South Africa. The current version of the dental curriculum was implemented in 2014. Until then, dentistry and medicine shared a joint curriculum^[9] which focused on the acquisition of the basic medical sciences with minimal early clinical exposure in context. From 2014 onward, first-year dental students participated in a dedicated dental curriculum which was separate to the medical curriculum. The new curriculum embraced teaching and learning in the basic medical sciences, as well as specified dental modules which highlighted a niche dental perspective. The dental modules intentionally gave students the opportunity to assist fourth- and fifth-year dental students on a regular basis in the clinics. This approach is a form of early clinical exposure.

Research methods

This study was undertaken as an undergraduate research project. Ethical clearance was granted by the University of Pretoria (ref. no. 543/2017).

A mixed-methods study design was chosen to perform a cross-sectional evaluation of the first two years of study of the dedicated dental curriculum.

A mixed-methods approach uses a combination of qualitative and quantitative data to describe observations.^[10] This method was found to improve the integration of qualitative and quantitative data and the relevance of the findings.^[10] The approach was also implemented to allow for comparison with a similar study, previously conducted at the same institution when dentistry and medicine participated in a joint medical curriculum.^[9]

The target population included 179 second- to fourth-year students in 2018. First-year students were excluded as they did not sufficient early clinical exposure to provide constructive input at the time of the survey. Although initially approached, final-year students were subsequently excluded due to their busy schedules.

Although the results of this study may seem outdated, no curriculum changes have been implemented to the new dental curriculum created in 2014. Therefore, the results of this study are still relevant and valuable when reviewing the current curriculum.

The primary researcher approached the respective groups directly when they were gathered at the dental school and verbally invited them to participate in the study. Students were asked to complete anonymous written reflections regarding their experiences of the first two years of study. The primary researcher issued volunteers with an information leaflet and a blank page with the instruction contained in Box 1.

To avoid bias and allow students to respond based on their unique experience, no specific reference was made to any part of the curriculum. Students completed the one-page reflection at their own leisure.

Data capture was completed in 2018. The narrative essays were subsequently analysed in 2019, using a thematic approach described by Braun and Clarke,^[11] with accompanying percentage distributions.^[10] Themes were deductively identified according to the themes of a previous study conducted by Postma and Bronkhorst^[9] and inductively (without any preconceived premise) to include new emerging themes not catered for in the deductive analysis.^[11] The primary researcher conducted the analysis which was checked by the second author until agreement was reached on higher-order emerging themes.^[11]

Results

One hundred students agreed to their narrations being used for research purposes (56% response rate), with just >50% representation for each of the groups (Table 1).

Positive feedback

Students alluded to an enjoyable experience (28%) and were favourable to earlier exposure to clinical dentistry (28%) and the dedicated dental curriculum (17%), which were relevant (15%) to them. Students suggested that they gained numerous friends (14%), grew on a personal level (12%) and felt the curriculum contributed to a professional advantage (11%) with helpful and knowledgeable lecturers (11%). Students also enjoyed learning within a smaller group of students (7%), referring to not having class with medicine students anymore.

‘Overall, the curriculum is relevant and well executed.’

‘Exposure to the clinical environment was great.’

‘...this will ultimately make us better professionals.’

‘Anatomy has been more applicable for me personally, especially regarding head and neck ...’

Four percent (4%) of students asked for more early clinical exposure. There were from fourth-year students with considerable clinical experience.

Negative feedback

Students suggested that the new curriculum contained too much irrelevant information (18%), was difficult and stressful (15%), and challenging with an intense scope (13%) that could be construed as a waste of time (8%). Students further described the experience as overwhelming (6%), disorganised (5%) and indicated that they struggled with time management (4%). Some students suggested the use of a promotion system (4%), which would allow students to qualify for examination exemption when performing on a high level during the year, thereby reducing the total number of mandatory assessments and the assessment load.

‘I was very overwhelmed by the heavy workload...’ and ‘very irrelevant subjects.’

‘It was stressful...’ and ‘...it’s too much congested academic work...’ with ‘many academic and emotional challenges.’

Few students had a negative view of the curriculum split with medicine which resulted in a compromised professional relationship between dental and medicine colleagues (5%).

‘...there is no relations (sic) between our medical colleagues...’

Discussion

This study evaluated dental student experiences of the first two years of study using narrative feedback evaluated with a mixed-methods approach. The impact of early clinical exposure was a focus area of the analysis, although related emerging themes were also noted.

The findings of the current study suggest that improved relevance has been achieved in the dental curriculum which was introduced in 2014. It appears that the strategy to allow first- and second-year dental students to participate in specified dental modules, and to assist fourth- and fifth-year students, recorded some benefit. Emerging themes suggest that students viewed this experience as positive, and that the dedicated dental curriculum assisted them in terms of their professional and personal development. The benefits of earlier clinical exposure have been highlighted in the context of dental education^[1-3] and is thoroughly described in the background section of this paper. The findings of this study lend support to the value of early clinical exposure as pedagogy in the local context. The current study’s findings suggest that there are indications that the 2014 version of the curriculum can be further improved by granting students more early clinical exposure. The call for more early clinical exposure came from fourth students, who were treating patients at the time of the study. This could be viewed as significant as these students experienced the benefits of early clinical exposure in the 2014 version of the curriculum first hand.

Not all feedback generated through the current study was positive. The frequent emergence of themes indicating a curriculum, which is overwhelming, difficult and stressful, with an intense scope may suggest inappropriate curriculum load. Comparing the findings of the current

Table 1. Percentage distributions of emerging themes from second- to fourth-year cohorts

Themes	BChD 2, n=32	BChD 3, n=37	BChD 4, n=31	Total %
Positive feedback				
Enjoyable experience	6	14	8	28
Early exposure to clinical dentistry is beneficial	3	12	13	28
Positive view of a specialised dental curriculum	0	7	10	17
Relevant	4	6	5	15
Gained numerous friends	10	4	0	14
Grew on a personal level	10	1	1	12
Professional advantage	1	5	5	11
Lecturers helpful and knowledgeable	8	3	0	11
Enjoyed a smaller group	2	4	1	7
More dental subjects needed early on	0	0	4	4
Negative feedback				
Curriculum load				
Too much irrelevant information	8	3	7	18
Difficult and stressful	6	7	2	15
Challenging, with an intense scope	10	3	0	13
Waste of time	3	5	0	8
Overwhelming	2	3	1	6
Disorganised	0	5	0	5
Difficulty with time management	4	0	0	4
Advocated the promotion system	0	4	0	4
Poor relationship between dental and medical colleagues	0	1	4	5

Box 1

One-page anonymous reflection: (Do not write your name on this page!!!)

In the space below, write a one-page reflection/narration on your “experiences in the first two years of study” in the BChD curriculum. If you are a second-year student, please only write about your first year of study. Please highlight both positive and negative aspects of your experience.

study with the findings of a study which examined the first two years of study of the pre-2014 joint curriculum,^[7] great similarity is noted. It appears as if the previous joint curriculum may have been overloaded and stressful, with a considerable perception of irrelevant content.^[9] It has been found that high curriculum load in dental education is a common problem,^[2] as well as stress and anxiety among dental students.^[5] Attempts must therefore be made to create a curriculum that is more balanced for optimal performance.^[4] This can be achieved through removing unnecessary, duplicated and redundant content and focusing on academic relevance^[3] by means of detailed curriculum mapping.^[12] Further study should focus on identifying curriculum content which is perceived by students to be irrelevant and unnecessary, and for such content to be systematically eliminated.

One core purpose of early clinical exposure is to develop students’ interpersonal skills. One emerging theme from this study noted that some students made numerous friends within the dental class and that some students enjoyed the reduced class size. It is conceivable that the exposure of junior dental students to senior dental students working in the dental school clinics contributed to this feedback. This can be viewed as a potential benefit of the 2014 version of the curriculum. Some students perceived being deprived of the opportunity to build inter-professional relationships with medicine students as a negative. This perception is not directly related to early clinical exposure but is important to note as a potential part of the curriculum that needs to be addressed.

The main limitation of this study is its cross-sectional design restricts inferences of cause and effect. Issues related to the age of the data are addressed in the methods section. Moreover, findings should be interpreted in context, as the feedback was based on student perception, and the analysis may have been influenced by frame of reference of the researchers. The researchers exercised careful reflection and repeated re-evaluation to ensure improved objectivity and increased credibility of the data. Most findings of the current study are externally validated by reports in literature.^[2] The representativeness of the sample is also a strong point of the study.

Conclusion

The findings of this study suggest that the current version of the dental curriculum that includes early clinical exposure achieved improved relevance and benefit despite being perceived as overwhelming, difficult and stressful. The findings of the current study suggest an intense scope and a heavy curriculum load. Further study should focus on the identification and elimination of irrelevant and unnecessary content through systematic curriculum mapping of content to achieve a balanced curriculum conducive for optimal learning.

Declaration. The researchers hereby declare that the present article is our own original work, and has not been submitted for publication in any other academic journal or organisation.
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