

Assessing students' clinical time management performance: A case study

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ABSTRACT

Introduction

Student-centred clinical training forms part of the undergraduate training programmes in dental therapy and oral hygiene. Within this setting, students develop soft skills such as time management. However, it is unclear how these skills are assessed.

Aims and objectives

The study examined patient satisfaction related to students' time management in completing clinical procedures within an allocated training session at a higher education institution in South Africa.

Methods

A descriptive, cross-sectional survey using an adapted Dental Satisfaction Questionnaire (DSQ) collected data from 231 dental patients referred to the undergraduate student training clinic.

Results

Only 68.8% of the patients strongly agreed that students completed their treatment during the appointment session. About 93.5% of the patients (n=216) indicated that students were punctual for their appointment. Almost 95.7% of patients (n=221) indicated that students explained each step of the treatment procedure to them. One central theme emerged: the perceived impact of time taken during sessions.

Conclusion

Patients were satisfied with the time students took to complete the clinical session. Patients' inputs could provide further insights into student-centred clinical training in the identified training programmes.

Keywords

Time management skills, patient satisfaction, clinical competency, dental therapy, oral hygiene, soft skills, competency-based curricula, experiential learning

INTRODUCTION

The goal of competency-based learning underpinned in dental training programmes is to support dental therapy and oral hygiene students into developing competencies aligned to the designed scope of practice for each identified dental professional.¹⁻² These undergraduate training programmes are developed using experiential teaching and learning pedagogy to drive learning outcomes.³ Learning outcomes promote competency development.^{1,5,7} Competency is initially developed in the preclinical setting, where dental therapy and oral hygiene students train on simulators to learn basic technical skills to transition into the clinical environment.^{1,8} In student-centred clinical training, students complete a series of clinical procedures directly on patients aligned with service-based learning. Settings such as academic hospitals, community clinics, schools and other decentralised training sites provide opportunities for students to learn in real-world settings.⁴

These experiences could enhance patient-centred care, leading to the development of clinical competency.^{1,5,7-9,22-23} This could, in turn, culminate in the knowledge, vocational skills and values developed.^{1-2,5,7} However, a key issue raised in the literature has suggested that assessing competency remains complex and controversial within the framework of competency-based curricula.⁵⁻⁷ A growing trend in the literature has shed light on using patient satisfaction surveys to assess students' competency in dental training programmes.¹⁰⁻¹³ This paper reports patients' satisfaction with students' clinical time management performance at an identified clinical training site (Anonymous version). Dental therapy and oral hygiene training were introduced at the identified institution in the late 1970s to increase the number of dental professionals in the public health sector.²⁶

The training has significantly evolved with expanding the scope of practices to allow graduates to work in a public or private dental setting. Both programmes are offered full time for three years. The curricula embed similarities in theoretical and practical modules, allowing dental therapy and oral hygiene students to undertake clinical-based training from the second to the end of the third year. Training sessions are structured in two-hour allocations at the training site, a Department of Health facility. The service-learning components underpinned in clinical modules enable students to work directly on patients under clinical instruction to accomplish pre-determined clinical requirements per dental procedure. Students are tasked to conduct a dental examination and diagnosis and devise a treatment plan for a patient.²⁶

Time management remains crucial for dental therapy and oral hygiene students to develop in managing their

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clinical tasks and addressing the patient's main complaint within the clinical session. Moreover, students' time management competence assessed in dental therapy and oral hygiene training programmes remained unknown.^{11,14} Other studies assessed students' technical competence in mainstream dentistry.⁶ In turn, time management skills could be assessed in students' clinical sessions through patient voices.^{2,10-14,23} Therefore, given the limited published literature, this study aimed to examine patients' satisfaction with the time taken by second and third-year dental therapy and oral hygiene students to complete clinical procedures within an allocated training session.

METHODOLOGY

Study design

The study design was a case study that included a descriptive, cross-sectional survey used to collect data.

Study tool

The study tool was an adapted Dental Satisfaction Questionnaire (DSQ) version.¹⁶ Approval was granted by the authors' institution for authorisation to use this validated patient satisfaction survey. The survey comprised a total of 30 questions. Questions 1-28 included short, closed-ended statements that evaluated patients' satisfaction across various domains (Table 2). These statements were linked to elicit 5-point Likert scale responses with scores ranging from 1=strongly agree, 2=agree, 3=not sure, 4=disagree and 5=strongly disagree. Some questions were scored reversed. Questions 29-30 gathered the participants' open-ended responses, describing their experiences when the students completed their treatment and identifying areas for the students to improve.

Study participants

The study population were dental patients (18 years and above). The inclusion criteria included patients referred to the undergraduate student training clinic for dental treatment (dental prophylaxis, restorations or extractions). Children and adult patients who needed dental treatment beyond the students' practising scope or from the Department of Health dental staff were excluded. A total maximum sample size of $n=231$ patients was calculated by a statistician contracted to the study. The sample size determination formula: . Where Z is the upper point of the standard normal distribution, which is 1.96, d is a clinically acceptable margin of error, 5%, and P is the prevalence of patient satisfaction, 80%.¹⁵ Participants were selected using simple random sampling and were given a fair and equal chance to participate in this study.

Data collection

The study tool was piloted on participants ($n=24$) who met the study's inclusion and exclusion criteria. Research assistants were involved in the data collection process, which involved inviting, distributing and collecting data from participants who provided written consent at the end of the students' clinical sessions. The results gathered were excluded from the main study. Modifications were made for logistical data collection within the clinical setting. Data was collected from the March 25 to April 16 2024. Research assistants commenced primary data collection. The assistants coordinated, invited, distributed and collected data from participants who provided written consent. Participants took 5-10 minutes to complete a survey and

insert it in the designated boxes provided. Data collection spanned from 23rd April to May to 30th of August 2024. The data was cleaned, counted, assigned with codes and captured electronically on a Microsoft Excel® spreadsheet (Windows 11 Version 2405). An independent checker verified data management.

Data analysis

The captured data were entered in the Statistical Package for the Social Sciences (SPSS) version 28 for analysis. Univariate descriptive statistics were used to report on the measures of central tendency and frequencies. The open-ended responses were analysed thematically. The dataset was read over three times to gain an overview and sense of familiarity. Initial codes were assigned to statements. This was an inductive approach, where codes were created according to the responses made and not extracted from the questions. The coded data was then grouped to search for emergent patterns. These patterns were categorised into themes. Themes, including subthemes, were redefined to provide answers to the open-ended questions.

Validity and reliability

This study's internal and external validity was achieved through the following efforts: professional guidance and mentorship from the research supervisor, the design and modifications made to the survey, the piloting of the study tool, the use of the probability sampling method, and the large sample size. Reliability was measured by Cronbach's alpha (27 items; $\alpha=.905$), indicating a good score. The statistician and research supervisor validated the results, leading to credibility.

Ethical considerations

Ethical approval was in line with(Anonymous version).to conduct this study. A language practitioner translated the study tool, information and consent form into isiZulu to ensure participants were comfortable with their language proficiency. Participants' names were not included and code names were assigned to report on quotations used. Patients' rights, confidentiality, trust and anonymity were upheld per the Department of Health policies and practices.

RESULTS

Two hundred and thirty-one participants completed the patient satisfaction survey, which yielded a response rate of 100%. While more than two-thirds of the participants (68.8%) strongly agreed that the student completed their treatment within the appointment session, only 2.6% of the participants strongly disagreed/disagreed that the student understood their dental needs. Most participants (96.1%) strongly agreed/agreed that they had faith and trust in the healthcare facility. Two hundred and sixteen participants (93.5%) indicated that the student was punctual for their appointment. Almost 95.7% of participants ($n=221$) indicated that the student explained each step of the treatment procedure to them. More than two-thirds of the participants (65.4%) strongly agreed that the students did not keep them waiting (Table I).

The highest satisfaction mean was achieved in the continuity of care (4.70), while the lowest mean score was noted in pain management (3.57). The total time management skills established a high mean (4.50) (Table II).

Table I: Patients' satisfaction with students' time management performance

Statements n (%)	Strongly agree n (%)	Agree n (%)	Not sure n (%)	Disagree n (%)	Strongly disagree n (%)	Total
1 The student was able to complete my treatment within the appointment session.	159 (68.8)	50 (21.6)	9 (3.9)	8 (3.5)	5 (2.2)	231 (100)
2 I feel disappointed with the standard of care received today.	12 (5.2)	4 (1.7)	6 (2.6)	63 (27.3)	146 (63.2)	231 (100)
3 The student understood my dental needs.	171 (74.0)	48 (20.8)	6 (2.6)	1 (0.4)	5 (2.2)	231 (100)
4 I understood what the student advised me regarding my dental condition.	179 (77.5)	44 (19.0)	6 (2.6)	0 (0.0)	2 (0.9)	231 (100)
5 I have faith and trust in the healthcare at this facility.	168 (72.7)	54 (23.4)	5 (2.2)	0 (0.0)	4 (1.7)	231 (100)
6 I was treated with respect and dignity.	191 (82.7)	32 (13.9)	4 (1.7)	1 (0.4)	3 (1.3)	231 (100)
7 The student was punctual for my appointment.	167 (72.3)	49 (21.2)	12 (5.2)	1 (0.4)	2 (0.9)	231 (100)
8 The student explained each step of the treatment to me.	167 (72.3)	54 (23.4)	3 (1.3)	2 (0.9)	5 (2.2)	231 (100)
9 The student performed a quality treatment and standard.	172 (74.5)	47 (20.3)	8 (3.5)	1 (0.4)	3 (1.3)	231 (100)
10 The student did not keep me waiting.	151 (65.4)	59 (25.5)	9 (3.9)	6 (2.6)	6 (2.6)	231 (100)
11 I felt minimal pain during my procedure.	76 (32.9)	74 (32.0)	18 (7.8)	32 (13.9)	31 (13.4)	231 (100)
12 The student communicated with me effectively.	175 (75.7)	49 (21.2)	2 (0.9)	2 (0.9)	3 (1.3)	231 (100)
13 The student needed to be more efficient in treating me.	14 (6.0)	4 (1.7)	8 (3.5)	60 (26.0)	145 (62.8)	231 (100)
14 I will return to the same facility for care again.	180 (77.8)	38 (16.5)	9 (3.9)	2 (0.9)	2 (0.9)	231 (100)
15 The quality of service rendered by the student requires improvement.	30 (13.0)	35 (15.2)	30 (13.0)	47 (20.3)	89 (38.5)	231 (100)

Table II: Measures of central tendency of patients' satisfaction across subscales

Subscales	Mean (SD)	Min	Max	Median
Technical skills	4.36 (0.63)	1.00	5.00	4.40
Quality of care	4.58 (0.55)	1.00	5.00	4.75
Continuity of care	4.70 (0.67)	1.00	5.00	5.00
Health facility	4.68 (0.59)	1.00	5.00	5.00
General satisfaction	4.27 (0.52)	1.80	5.00	4.20
Time management skills	4.47 (0.54)	1.00	5.00	4.56
Pain management	3.57 (1.41)	1.00	5.00	4.00
Total time management skills	4.50 (0.53)	1.00	5.00	4.64
Patient satisfaction index	4.44 (0.49)	1.14	5.00	4.57

Analysis of the open-ended questions

One central theme arose from the analysis, followed by subsequent subthemes on patients' satisfaction with the time students took to render dental treatment efficiently within a clinical session of two hours.

Theme 1: The perceived impact of time taken during sessions

Participants expressed their satisfaction by relating their experiences to the time the students took to treat them during their clinical appointment sessions. They highlighted that those students displayed a standard of professionalism, respect and communication and valued their presence in providing dental care. Three subthemes are shown in Table III.

Table III: How patients perceive students' time management in the clinic

Subthemes	Patient quotations
3.1 Students' punctuality impacts the time spent on treatment	Participants mentioned they were pleased with students being punctual for their appointments and ensuring their treatment was completed on time. <i>"The student finished within the time my appointment was due. He was punctual and he did a great job which made my experience pleasant." DPJG365</i>
3.2 Care graced with compassion	Participants stated that students projected a kind and caring attitude while being treated during their treatment. <i>"I was comfortable during my appointment session, she(student) knew what she was doing, and she did not keep me waiting. There was no delay." DPJD421</i>
3.3 Reduced delays in student clinics	Participants believed that students had overall good time management skills in completing their treatment at the appointments they attended. <i>"I was received by the student on time and we started the session at the exact time that was booked for my appointment, the treatment time was moderate, I have nil complaints." DPJK112</i>

DISCUSSION

The present study examined patient satisfaction related to students' time management in undergraduate student-centred clinical training.

The study findings indicated that most patients (96.6%) agreed they were treated respectfully and with dignity during their clinical sessions. This implied that students professionally conducted themselves when working with patients. This finding is consistent with another report, in which dental students and interns treated 96.5% of participants from a polyclinic with respect.¹⁷ According to the research conducted by Salim et al,¹⁸ communication is a non-technical skill that enables students to establish a rapport to guide treatment planning and prognosis when engaging with patients to achieve better time management. In turn, it was found that 95.7% of patients (n=221) indicated that students explained each step of the treatment to them. This is supported by Tripodi et al,¹⁹ who found that 85.8% of patients rated "excellent" when the students discussed the steps to follow, including the continuation of the treatment plan. Another study further enhanced this, which found positive relationships linking students' time management skills to their communication abilities, leading to their overall motivation.²⁰ These findings, taken together, underscore the need for soft skills to be developed in the clinical dental learning environment.^{11,14}

More than half of the study sample (68.8%) strongly agreed that the students completed their treatment within the appointment session. This suggested that students efficiently provided dental care for their patients within the clinical session. This was supported by another study that found that 87% of patients were highly satisfied/satisfied with the time taken to treat them.⁷ This is further strengthened as 65.4% of participants strongly agreed that students did not keep them waiting. Likewise, participants perceived students to have good time management per subtheme 3.3, which accords the reduced treatment delay. This finding is contrary to a previous study that suggested that waiting times may be longer than expected due to the nature of how academic training programmes operate to accommodate teaching and learning.²¹ Most patients (77.8%) indicated that they would return to the study site for care again. This implies that patients return to the same facility because they trust that the care received meets their expectations. This finding was consistent with other

studies, which found that patients (53.8%) rated the service quality higher than other facilities.²²

Service-based learning can contribute to building students' clinical competency by gaining real-world experience.^{3,9} Through these experiences, students develop confidence in interacting with and treating patients to understand their dental needs better. As such, more than two-thirds of patients (74%) revealed that students understood their dental needs. This indicated that patients were satisfied with students' competence to devise a treatment plan that accommodated their needs.²⁴ This articulates with the pedagogy of patient-centred care, where students tailor treatment plans according to the individualised patient and give advice to improve patient outcomes.^{19,23} One finding that stands out from the earlier results is that most patients (93.5%) agreed that the students were punctual for their appointment sessions. This finding is consistent with theme 3.1. These empirical findings infer that students' clinical time management performance is associated with them being punctual. This association underscores punctuality as one of the critical skills in time management required in clinical-based training. This was supported in another study that linked postgraduate students' punctuality to better time management skills.²⁵

Study strengths and limitations

This study used the Dental Satisfaction Questionnaire, a validated and reliable tool used mainly by international authors. In turn, the data obtained can be used to inform and initiate specific quality improvement projects to improve clinical training programmes. However, several limitations were noted in this study. The study focused on a single training site; thus, the findings are limited in generalisability. Patient demographics were not included in this study. Such data could have provided valuable insight into patient preferences based on sociodemographic profiling. The data was collected in the presence of students and could have introduced some bias based on providing socially desirable responses. The study did not include students' perspectives, including clinical supervisors.

CONCLUSION

Patients were satisfied with how students managed their time and conducted themselves in providing dental clinical care. The findings reported here shed new light on students'

punctuality associated with their clinical time management performance. Patient feedback could add valuable insight into clinical training within the undergraduate programmes. It is recommended that dental training institutions consider punctuality as one indicator to evaluate time management skills in clinical assessment rubrics when assessing students' clinical competency. An allocation of time could be dedicated to the undergraduate dental curricula for patient feedback in clinical assessments to determine students' performance. The soft skills identified by participants, such as communication, respect, empathy, care and punctuality, apart from time management, should regularly be assessed to align with the skills and values defined in learning outcomes. This may lead to and strengthen patient-centred care within student-centred clinical training. The core competencies for all undergraduate clinical training programmes should be reviewed and, if necessary, include training in time management skills.

DECLARATION

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Ethical permission

(Anonymous version)

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Conflicts of interest

None.

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CPD questionnaire on page 170

The Continuing Professional Development (CPD) section provides for twenty general questions and five ethics questions. The section provides members with a valuable source of CPD points whilst also achieving the objective of CPD, to assure continuing education. The importance of continuing professional development should not be underestimated, it is a career-long obligation for practicing professionals.

