

Perception of Causes of Repetition Amongst Dentistry Students A Novel Experience with Content Analysis

Percepción sobre Causas de Repetición entre Estudiantes de Odontología.
Una Experiencia con Análisis de Contenido

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ABSTRACT: To determine the perception of fourth-year dentistry students at a private Chilean university, regarding the causes of their course repetition. Open-ended questions were asked to 14 repeating students. The resulting narratives went through content analysis using QDA Miner Lite software. The category "non-fulfilment with clinical requirements" had the highest frequency of appearance (52.0 %). Codes with the highest frequency of appearance were "Lacked of time" (24.0 %); "Lack of proper organization of time/patient's agenda" (18.0 %) and "Lack of knowledge of the clinical dynamics" (16.0 %). The tardiness and repeated absences of the patients were mentioned as the greatest difficulty faced by the students (18.0 %). Students perceive the reasons behind their repetition, differently. However aspects associated with compliance of clinical requirements and patients management are recurring issues. Content analysis is a useful tool for acquiring and analyzing data of complex phenomena as perspectives on university repetition among higher-level dentistry students.

KEY WORDS: academic failure, academic performance, perception, dentistry school.

INTRODUCTION

Repetition of university courses is a multi-causal phenomenon of converging factors including the student's background, institutional factors and social factors (Celis *et al.*, 2013; Craveri & Spengler, 2014; González *et al.*, 2005; Micin *et al.*, 2016; Pérez Cardoso *et al.*, 2019). In turn, repetition has various consequences as high levels of frustration for the student, low self-esteem and loss of social support from close classmates (González *et al.*; Craveri & Spengler). The family's economy is also affected since, many Chilean university students must finance part or all of their studies (González *et al.*). Course repetition also impacts teacher's rating assessments and infrastructure management, significant aspects in university accreditation processes (González *et al.*; Celis *et al.*; Craveri & Spengler; Tamayo Cardona *et al.*, 2015).

Few studies focus on course repetition among higher level dentistry students, and fewer still investigate the possible causes from the point of view of those affected, that is to say perception (Alcota *et al.*, 2015; Dapde *et al.*, 2018). Perception is the cognitive process whereby people are able to understand their environment and act in response to the impulses they receive (Cano Soriano, 2015) Perception is subjective by nature, as what is perceived by someone may not correspond to reality itself, or with another person's perception, according to each individual's psychological characteristics and socio-cultural environment (Martínez-Salgado, 2012; Parra, 2009). An increasing number of health researchers are currently choosing to use qualitative research to explore and describe complex phenomena (Erlingsson & Brysiewicz, 2017). Qualitative

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analysis presents some differences with quantitative ones. Regarding the number of participants, statistical representation is not sought, the sample size is determined by the convenience of the researchers, and/or by the saturation principle: when the interviewees stop to contribute additional and differentiated information on the study problem, interviews are stopped (Parra; Meneses & Rodríguez, 2011; Martínez-Salgado). In practice, we can select the candidates to interview according to who have relevant information; who is more accessible, who is willing to report, who is more capable of reporting accurately, and who trust the interviewer (Meneses & Rodríguez). Although the final “n” may be small, the conversation with each one of the participants opens up different nuances in the face of the phenomenon, enriching the possibilities for more future research (Meneses & Rodríguez). Open-ended questions, or semi-structured interviews allows the interviewees to answer based on their own understanding of a phenomena, which can be helpful in trying to understand their own perception (Martínez-Salgado; Meneses & Rodríguez; Erlingsson & Brysiewicz). This is the reason why they are the main instruments of qualitative research, because it enables the information provided in these testimonies to be amassed (Mediavilla Saldaña & García García, 2013).

An important advantage of qualitative analysis is flexibility in the face of change. The researcher must become an active listener, guiding the conversation and if he/she notices that there is a recurring theme that was not foreseen, he/she can design a new question and ask it among the interviewees (Martínez-Salgado; Meneses & Rodríguez; Mediavilla Saldaña & García García). Lastly, content analysis allows for the examination of a large amount of written text to extract its core content, as shown in Table I. The researcher’s work focus into translating

the main ideas into codes and categories, which can be later quantified by the number of times they are repeated, thus frequency of occurrence (Erlingsson & Brysiewicz). Content analysis starts with “meaning units” which are elements with the lower level of abstraction and similar to the literal text of the narrative, rising to higher levels of abstraction, named categories and themes, that reflects and interprets the ultimate content of the text (Table I).

This paper focuses on fourth year dentistry majors at a private Chilean university (PCU), in which patient care begins with Integrated Clinic I course (IC-I). The final course grade comprises theoretical and practical aspects. The latter require students to have a minimum of clinical actions performed in patients (clinical requirements). Students must approve both aspects of the course, independently. The aim of this paper is to determine the perceptions of PCU’s students who repeated the fourth year during their dentistry studies, regarding the causes of repetition. Our hope is that the information presented will be useful to broaden the perspectives on higher-level dentistry students’ repetition, and explore little-used methodological tools in the field of health sciences (Erlingsson & Brysiewicz).

MATERIAL AND METHOD

The total of repeating students enrolled in the fourth year dentistry course of IC-I at PCU were identified (n = 35). Students who repeated the course more than once (n=2) and those who dropped out (n=1) were excluded, leaving a total of 32 repeating students. The authors did not scrutinize if the students had failed the theoretical, the clinical or both qualifications. In accordance with the recommendations for this type of

Table I. Example of content analysis process.

| Meaning units or literal text | Condensed meaning units | Code | Categories | Theme |
|---|---|--|--|---------------------------------------|
| “Whenever I went out to ask the girls at the reception desk, they never knew anything and were super insecure about the protocols. They would send me to ask my teacher, but he was busy with another classmate and couldn’t always help me. So, I had to seek another teacher for help. You can waste lots of time looking for teachers to help you through the protocol aspects and bureaucracy in the school facilities” | The reception desk people didn’t help the student. They were not aware of some protocols. They said to ask the teacher. | Poor problem-solving capacity by reception desk personal. | Reception-desk protocols management. | PCU’s personnel protocols management. |
| | Teachers were busy. Teachers are needed for administrative issues. | Teachers’ lack of time to help all the students with administrative protocols. | Teacher guidance for protocols management. | |

research (Parra; Meneses & Rodríguez; Martínez-Salgado; Dapde *et al.*), one open-end question was designed, which was then reviewed and validated by experts: “Why do you think you repeated the course?” A small script helped the interviewer verify that the interviewees spoke about their opinions, feelings and past experiences in regard to the question. Students previously known to the investigators were chosen to be interviewed (Parra; Meneses & Rodríguez; Martínez-Salgado). During the first three interviews, issues regarding the complexity in patient management were repetitive, which is why it was decided to add a second question: “How did you handle “difficult to manage” patients?” with its own script. The interviews were conducted and recorded by the same researcher inside PCU’s facilities. The resulting recordings were transcribed verbatim in Word, Microsoft Office 2011 while protecting the interviewee’s identity. The text thus obtained underwent content analysis using QDA Data Miner Lite qualitative data analysis software.

This study was authorized by the pertinent Scientific Ethics Committee.

RESULTS

Fourteen interviews were conducted (44 % of the universe), at which data saturation was reached. The

average duration of the interviews was 30.1 minutes. “Why do you think you repeated the course?” was the first open question. We identified 50 condensed units of meaning and grouped them into 6 codes, which in turn were arranged into 3 categories under a single theme (Table II). The first category in this theme named “non fulfillment of the clinical requirements”, includes 52.0 % of the total recounted meaning of units for the first question and contains 3 codes: a) “Lacked of time,” with a n=12 (24.0 %), which means that from the total number of interviews conducted, responses related to this code were cited 12 times. For this code, students recognized this outcome as a failure associated with their own behavior. b) “Low commitment from patients,” was also ascribed to the lack of clinical requirements, but as a failure associate to the patients’ behavior. c) “Availability of patients” entails the students’ struggles for finding patients whose therapeutic resolution matches those required by the study plan (14.0 %). Other categories in order of importance are “planning of the clinical session”, which incorporates the organizational aspects that the student should have carried out in order to be able to treat patients, and “transference”, which refers to performance in real clinical settings of performances previously practiced in simulated settings (Beal *et al.*, 2017).

The second question “How did you handle “difficult to manage” patients?”, inquired about the struggles faced when working with patients during the

Table II. Distribution of codes under theme “Perceived causes of repetition” derived from question n°1 “Why do you think you repeated the course?”

| Codes | Frequency of occurrence % (n) | Category and its frequency of occurrence (%) |
|---|-------------------------------|---|
| “Lacked of time” , Includes meaning units related to lack of time to achieve the minimal clinical requirements, whatever reason. | 24.0 % (12) | |
| “Low commitment from patients”, comprise perceptions related to the patient not showing up, patient’s unpunctuality and his/her low tolerance of the student’s slowness compared to a professional Dentist. As a direct consequence, the students were not able to fulfill the clinical requirements. | 14.0 % (7) | Non-fulfillment of the clinical requirements (52.0 %) |
| “Availability of patients”, contains meaning units of descriptions related to students struggles finding patients whose therapeutic resolution matches those specific required by the study plan. | 14.0 % (7) | |
| “Lack of proper organization of time/patient’s agenda”, comprises perceptions related to the student’s inexperience in managing a patient’s agenda and coordinating their own and others’ time | 18.0 % (9) | Planning of clinical session (34.0 %) |
| “Lack of knowledge of the clinical dynamics”, includes every account related to or that signifies the ignorance of how to treat a patient at the dental school’s facilities, comprising administrative formalities as teacher authorization processes or use of the supply dispensary | 16.0 % (8) | |
| “Fear of performing procedures”, refers to fear of performance in real clinical settings, even though the performances were previously practiced in simulated settings. | 14.0 % (7) | Transference (14.0 %) |
| TOTAL | 100 % (50) | 100 % |

development of a care-provider/patient relationship. We identified 54 condensed units of meaning distributed across 10 different codes, and grouped them into 3 categories, under the theme of “Difficulties in managing patients” (Table III). In order of importance, the

categories are “Nature of difficulty”, “Patient management strategies” and “Clinical tutors’ support”.

Finally, none of the interviewed students mentioned failing the theoretical aspects.

Table III. Distribution of codes under theme “Difficulties in managing patients” derived from question nº2: “How did you handle “difficult to manage” patients?”

| Codes | Frequency of occurrence % (n) | Category and its frequency of occurrence (%) |
|--|-------------------------------|--|
| “Tardiness and/or repeated absences”, comprise ideas related to patient’s unpunctuality and/or absences in spite of being reminded by the students about their appointment. | 20.4 % (11) | Nature of difficulty (55.5 %) |
| “Difficult personality”, contains meaning units about analytical, dominant and/or uncooperative patients. Low tolerance for slowness is also included, as mentioned before. | 20.4 % (11) | |
| “Patient wants to obtain a financial benefit”, relates to the fact that some patients requested the students to pay for their dental treatment. | 14.7 % (8) | Patient management strategies (24.1 %) 13 |
| “Talking”, refers to a conversation (by phone or in person) between the student and his/her patient to solve the problematic situations. | 7.4 % (4) | |
| “Disciplinary dismissal”, understood as the cessation of the patient’s dental care due to bad behavior towards the student. | 7.4 % (4) | |
| “Ignoring the behavior”, includes when the students did not pay attention to the bad behavior, ignoring the patient’s behavior and continuing to work. This was understood by the students as a way of de-escalate the situation | 5.6 % (3) | |
| “Calling another patient”, meaning contacting other patient by phone or social media, so that he or she could use the appointment time that the initial patient failed to. | 3.7 % (2) | Clinical tutors’ support 11 (20.4 %) |
| “Helped”, includes different ways in which the teaching team supported the student during the development of the care-provider/patient relationship. | 11.1 % (6) | |
| “Left alone”, discloses the perceptions of not having received any teacher guidance, despite having clearly requested it. | 5.6 % (3) | |
| “Does not ask for help”, refers to students who did not ask for help from their teacher, no matter the reasons. | 3.7 % (2) | |
| TOTAL | 100 % (54) | 100 % |

DISCUSSION

As a category, "non-fulfillment with clinical requirements" had the highest frequency of appearance (52.0 %) related to causes of repetition among the students. Conversely, individual codes with the highest frequency of appearance were "Lacked of time" (24.0 %), "Lack of proper organization of time/patient’s agenda" (18.0 %) and "Lack of knowledge of the clinical dynamics" (16.0 %). The interviewees perceived those codes as key causes of their repetition. Non-fulfillment of the clinical requirements (40.4 %), is highly relevant in dentistry according to Alcota *et al.* who among the causes of repetition identified having enough patients available for care, along with patient non-attendance of appointments leading to the student losing his or her clinical session, thereby not achieving the minimum of clinical actions at the end of their academic period. A great deal of the students' academic progress depends on patients' attendance, payment and

cooperation (Dávila *et al.*, 2011; Alcota *et al.*). Patient non-attendance forces students to develop a new and immediate action plan to avoid delaying progress in his or her coursework. Patient non-attendance was also reported in our research as a direct cause for repetition, but more students tended to attribute this outcome as a failure associated with their own performance under the code “Lack of time”.

"Lack of proper organization of time/patient’s agenda" (18.0 %) addresses the student’s inexperience managing a patient’s availability and coordinating their own time. In our opinion, it is plausible to consider PCU’s fourth-year students as freshmen for the second time in the course of their university studies, as they are facing new operating protocols for the university’s dental clinics and forms of evaluation and assessment, which may cause as much or more stress and anxiety as they experienced

upon first entering university life. Plus, having to coordinate lectures, clinical practice, and patient availability, can create an emotional burden that could turn into a bad experience accompanied by frustration, fear, anger, or lead to burnout syndrome when dealing with patient's tardiness, absences and lack of collaboration, in the face of high and ongoing professional requirements (Dávila *et al.*; Johnson & Mays, 2019). Pursuing a dentistry degree is highly demanding (Johnson & Mays) and requires students to deploy skills that go beyond the theoretical, including tolerance to frustration, problem solving, and development of patient management strategies (Dávila *et al.*), without much previous learning in these areas. The teaching role becomes even more important when considering that the fourth year's learning and curricular context is radically different, as stated before. Teacher-student interaction needs to take place in a safe environment that allows the student to ask questions, offer opinions and ask for help (Zúñiga-Mogollones *et al.*, 2018). Clinical instructors should fulfill the role of mediators or learning process guides and be procedural tutors and modelers of ethical behaviors and professionalism (Hendricson *et al.*, 2007; Villarroel & Bruna, 2017; Pérez Cardoso *et al.*).

Approaching "difficult-to-manage patients" has been recognized for other authors as causes of repetition among dental students (Alcota *et al.*). Real patients have features and characteristics that present more varied and complex challenges than simulators (Curtis *et al.*, 2007; Nunez *et al.*, 2012). In spite of the different instances for pre-clinical approach, the interviewees continue to report the lack of an intermediate step between pre-clinical work and clinical care. Concern for patient safety, understood as the requirement for bioethical safeguards when performing therapeutic procedures on human beings (Nunez *et al.*; Moore *et al.*, 2016) has prompted the development of low fidelity level pre-clinical methodologies such as simulators and dental models like Typodont® type which are intended for performance and assessment of strictly procedural tasks (Velayo *et al.*, 2014; Moore *et al.*). While these simulators have the benefit of providing training and an approach to clinical-like experiences, the human factor can hardly be simulated, which hinders analogous clinical experience (Curtis *et al.*; Anders *et al.*, 2016; Moore *et al.*; Johnson & Mays). The student has a "margin for error" with the simulators that does not exist when treating the real patient, and this generates fear and anxiety. Some interviewees

disclosed an emotional burden related to dealing with patients with a variety of dispositions and personality traits. Tacit learning activities - observation of clinical procedures carried out by experts - during the first years of study could be beneficial for student learning without compromising patients' safety (Field *et al.*, 2017; Johnson & Mays). Increasing the number of activities with standardized patients could be a good alternative as well (Moore *et al.*). Interaction with standardized patients increases student motivation, generates opportunities for active learning in a controlled environment and allows for practice of difficult situations, while encouraging the student to learn about topics such as empathy and professionalism (Anders *et al.*; Moore *et al.*). Despite the fact that contact with standardized patients has been a fundamental pillar in the training of other health professionals (Moore *et al.*), there is little evidence of its impact in pre-clinical dental training (Moore *et al.*; Zúñiga-Mogollones *et al.*).

Though this study was carried out in a single Chilean university, and each country's cultural factors may influence its results and interpretation (Dapde *et al.*), we believe that studies like ours allow for use of new methodologies and acknowledge new concepts and factors that could be key to academic success of students in health care field. We strongly believe that providing instruction that facilitates positive student-patient relationships (through workshops and/or crash courses about emotional intelligence, communication and social skills education) will improve the learning experience helping students in their clinical cycle (Alcota *et al.*; Al-Ansari & El Tantawi, 2015) especially when considering the significance this factor had in both our study and in other similar papers (Alcota *et al.*; Dapde *et al.*; Johnson & Mays).

CONCLUSIONS

The students perceive the reasons behind their repetition, differently. This heterogeneity notwithstanding, students consistently highlight the difficulties for the fulfillment of the clinical requirements and in building interpersonal relations with "difficult-to-manage" patients as a care provider. Content analysis proved to be a useful tool for acquiring and analyzing data of a complex phenomenon such as perception on university repetition among higher-level dentistry students.

FERNÁNDEZ, M. E. A.; PADILLA, A. P. A. & DÍAZ-YOKENS, M. Percepción sobre causas de repetición entre estudiantes de odontología. Una experiencia con análisis de contenido. *Int. J. Odontostomat.*, 15(1):125-131, 2021.

RESUMEN: El objetivo del estudio fue determinar la percepción de los estudiantes de cuarto año de odontología en una universidad chilena, con respecto a las causas de su repetición académica. Se realizaron preguntas abiertas a 14 estudiantes repitentes del cuarto año de la carrera de Odontología. Se desarrolló el análisis de contenido de los relatos de los participantes con el software QDA Miner Lite. La categoría "incumplimiento de requisitos clínicos" obtuvo la mayor frecuencia de aparición entre los relatos (52.0 %). Los códigos con mayor frecuencia de aparición son "faltó tiempo" (24.0 %); "mal manejo y organización de mi tiempo y el del paciente" (18.0 %) y "faltó conocimiento de la dinámica de la asignatura" (16.0 %). Como anexo, la impuntualidad y ausencias reiteradas de los pacientes, fueron mencionadas como la mayor dificultad enfrentada por los estudiantes (18.0 %). Los estudiantes perciben de manera heterogénea las razones detrás de su repetición académica, sin embargo aspectos asociados al cumplimiento de los requisitos clínicos y el trato con los pacientes, son reiterativos en los relatos. El análisis de contenido es una herramienta útil para adquirir y analizar fenómenos complejos, tal como la percepción sobre la repetición universitaria en años superiores de Odontología.

PALABRAS CLAVE: fracaso académico, rendimiento académico, percepción, escuela de odontología.

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