

## STUDY PROTOCOL

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# Vocational satisfaction, coping strategies, and perceived stress as factors of 'burnout' in clinical dental students.

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**Abstract:** Having discussed different factors contributing towards "Burnout Syndrome" (BOS) in dentistry students, the aim of this project is to analyze the existing relationship between vocational satisfaction, coping strategies and perceived stress as determining factors of burnout in 4<sup>th</sup> and 5<sup>th</sup> year dentistry students. **Methods:** Prospective cohort study (March-December). The relationship between vocational satisfaction, coping strategies and perceived stress as factors towards BOS in 4<sup>th</sup> and 5<sup>th</sup> year dentistry students will be determined. All participants will be required to sign a consent form the project will be evaluated by the Ethics Committee. The sociodemographic variables to be measured are: age, gender and socioeconomic status; the psychological variables are: Burnout Syndrome severity, using Maslach Burnout Inventory (MBI), coping strategies by Coping Strategies Inventory (CSI), perceived stress with Perceived Stress Scale Questionnaire (PSS). All versions above have been validated in Spanish, and vocational satisfaction of the Dentistry Degree will be measured using a questionnaire, with 6 questions for 3 parameters: career choice, current feeling and predicted feeling after graduation. The data collection will be carried out in 4 stages: informed consent obtainment; MBI, CSI, PSS scales and vocational satisfaction questionnaire in March. In the second (June), third (September) and fourth (November) stages, the questionnaires will be repeated: MBI, PSS and vocational satisfaction. The findings and analysis will be processed in STATA 10/SE including descriptive statistics, regression models, measures and tests of association. **Keywords:** "Students, Dentistry"[MeSH], "Burnout, Professional"[MeSH], "Stress, Psychological"[MeSH], "Vocational Guidance"[MeSH], "Adaptation, Psychological"[MeSH].

## Satisfacción vocacional, estrategias de afrontamiento y estrés percibido como determinantes del síndrome de burnout en estudiantes de odontología.

**Resumen:** Se ha descrito la interacción de diversos factores en la aparición del síndrome de Burnout (SBO) en estudiantes de odontología, el objetivo de este proyecto es analizar la relación existente entre la satisfacción vocacional, estrategias de afrontamiento y estrés percibido como determinantes del SBO en estudiantes de odontología de cuarto y quinto año. **Metodología:** Estudio de cohorte prospectivo (marzo-diciembre). Se determinará la relación existente entre la satisfacción vocacional, estrategias de afrontamiento y estrés percibido como determinantes del SBO en estudiantes de odontología de cuarto y quinto año. Todos los participantes accederán previa firma de consentimiento y el proyecto será evaluado Comité de Bioética. Se medirán variables sociodemográficas: edad, género y nivel socioeconómico; variables psicológicas: severidad de SBO utilizando el Maslach Burnout Inventory (MBI), estrategias de afrontamiento mediante el Coping Strategies Inventory (CSI), estrés percibido con el cuestionario Perceived Stress Scale (PSS), todas las anteriores en sus versiones validadas al español, y satisfacción vocacional con la carrera de odontología mediante cuestionario de 6 preguntas para 3 puntos: elección de la carrera, actual y proyectada después de la titulación. La recolección se hará en 4 tiempos: obtención del consentimiento informado, escalas MBI, CSI, PSS y el cuestionario de satisfacción vocacional en el mes de marzo. En un segundo (junio), tercer (septiembre) y cuarto (noviembre) tiempo se repetirá el MBI, PSS y el cuestionario de satisfacción vocacional. La tabulación y análisis se realizará en STATA 10/SE incluyendo estadística descriptiva, modelos de regresión, medidas y pruebas de asociación.

**Palabras clave:** Estudiantes de odontología, Agotamiento profesional, Estrés Psicológico, Orientación Vocacional, Adaptación Psicológica.

### Background.

Academic and work activities are themselves generating stress, as they lead to the employee's exposure to certain stressors, which, according to how these are lived, faced and solved, will determine an individual's response, be that adaptive or maladaptive.<sup>1</sup>

The concept "Burnout" was first used in the mid 1970s to refer the process of deterioration in the care and attention given to the users of human service organizations<sup>2</sup>. In general, the BurnOut Syndrome (BOS) has been conceptualized as a process occurring among professionals who work with people, or who deal with people as their work focus<sup>3</sup>. Social psycholo-

gist, Cristine Maslach, along with Susana Jackson, in 1981 describe it as "a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can happen among individuals that work with people"<sup>4</sup>.

Emotional exhaustion is characterized by a lack of own emotional resources and the feeling that nothing can be offered to another person, as one can no longer give more of oneself emotionally. It is an experience of discomfort and fatigue due to daily and maintained contact with people who their working focus<sup>5</sup>. It is considered as the first sign of the Syndrome<sup>6</sup>. Also, it is often perpetuated, due to inadequate coping strategies<sup>7</sup>. Depersonalization develops negative, cynical and insensitive feelings and attitudes towards recipients of the services provided, who are seen by professionals as dehumanized, due to emotional hardening<sup>5</sup>. This is a fundamental aspect of BOS, because others signs surrounding this one can be found in depressive disorders in general<sup>6</sup>.

Finally, the lack of personal accomplishment is defined as the perception that chances of personal achievement at work have disappeared, causing an individual to lower expectations and have a negative self-evaluation, including rejection felt about oneself or personal accomplishments already achieved, as well as feelings of failure and low self-esteem<sup>5</sup>.

Unfortunately BOS has a high prevalence among health professionals, including students. The dentistry field is both physically and mentally demanding, and when added to personal contact with patients, it can lead to BOS<sup>8</sup>. Dentists are the health professionals most affected by BOS, where factors such as weather and organizational issues, coupled with existing activity demands, interpersonal roles and their ambiguity, among others, are all factors that generate and/or trigger emotional exhaustion<sup>9</sup>. Moreover, BOS has been associated with drops in productivity, reduced quality of treatment delivery, intention to leave work<sup>10</sup> and a tendency to avoid contact with people, including colleagues, patients, friends and family<sup>8</sup>.

It has been documented that dental practice is regarded as the profession of health sciences that produces most anxiety<sup>4</sup>. Dentistry students are more likely to suffer anxiety, depression, exhaustion and depersonalization than medicine students<sup>11</sup>. Although the distress of working dentists is normally considered as a "professional syndrome", some evidence suggests that manifestations of BOS can be frequent and can be detected among dental students<sup>12</sup>.

Several studies with Chilean dentistry students have shown that the main factors associated to stress or BOS are increased workload, lack of time and some aspects of the clinical training<sup>13</sup>, with people even identifying themselves as participants of dishonest

behavior. This is due to the pressures imposed by the demands of the curriculum, including inflexible requirements that must be completed in order to graduate, and the fact that patients are seen as a program to complete<sup>14</sup>, a clear sign of depersonalization.

A comparison between Chilean dental students with Australian and New Zealand shows that Chilean students suffer higher rates of stress, especially in the fourth year and especially those who chose medicine as their first choice, not dentistry<sup>15</sup>. Students describe stress as a phenomenon accepted as a norm among dentistry students, seen as an indicator of hard work and efficiency. The stress levels are described as increasing as students progress through their degree. The students from the clinical course defined fourth year as the most stressful year of all, as they are just initiating the clinical stage. Moreover they show a dramatic difference between how much they like dentistry as a profession and dentistry as a degree<sup>16</sup>.

Regarding the characterization of the three factors of BOS, European studies shows that depersonalization reaches between 22% and 28%<sup>17</sup>, emotional exhausting 39% and the lack of personal fulfillment 41% of dentistry students from clinical stage. Because of health problems and low pay, more than the half of dentists from Jordan wouldn't choose their profession again, regardless of age, gender and specialty<sup>18</sup>.

Considering all the current knowledge about BOS among dentists, it is important and even urgent to take measures of prevention and intervention<sup>19</sup>. However, in Chile, specific studies of BOS in students in the clinical stage are scarce and have not picked up on the potential interaction between vocational factors, psychological resources and variability in the workload during the academic year (lengthwise), studies which could contribute to supporting more effective and efficient measures in the management of this serious problem.

#### Research question.

Considering the recognized influence of psychological factors and their relationship with Dentistry degree demands, especially in the clinic alperiod, the following research question is raised:

*How does the interaction of vocational satisfaction, coping strategies and perceived stress according to the workload affect Burnout Syndrome in fourth and fifth year dentistry students?*

#### Research hypothesis.

The international evidence suggests that there are protective and risk factors for occurrence of BOS in dentistry students, especially when they start the clinic

period (fourth and fifth year).

*Those factors may be grouped into internal factors, mainly the psychological resources of each person; and external factors, represented by academic demands in the clinic at period; to this we can add the vocational element that will determine the utilization of psychological resources and the perception of academic demands.*

#### Objectives.

General: To analyze the relationship between vocational satisfaction, coping strategies and perceived stress as determinants of BOS in dentistry students in fourth and fifth year.

#### Specific:

1. To determine the prevalence and severity of BOS, and the perceived stress levels of dentistry students of fourth and fifth year throughout the academic year.
2. To characterize the vocational satisfaction (past, present and future) and the coping strategies of fourth and fifth year dentistry students throughout the academic year.
3. To evaluate to correlation between the severity of BOS and the vocational satisfaction, coping strategies and perceived stress (variable along the year) of dental students of fourth and fifth year throughout the academic year.
4. To model the interaction of vocational satisfaction, coping strategies and perceived stress in their influence on the occurrence and severity of BOS.

#### Methodology.

Design: Cohort study with a duration of one academic year (March-December) in a Chilean Dental School. It will determine the relationship between vocational satisfaction, coping strategies and perceived stress as determinants of SBO in fourth and fifth year dentistry students.

Sample: Dentistry students in clinical period of dentistry school in Chile.

Inclusion criteria: Students who permanently attend patients under curricular activities of the fourth and fifth years of dentistry.

Exclusion criteria: Students who present psychiatric problems or who are not regularly attending clinics.

Ethical considerations: All study participants will be invited to sign a consent form, either agreeing to participate or not. The project will be evaluated and approved by the Bioethics Committee of Faculty of Dentistry of the University of Concepción. All participants can withdraw at any period of the cohort.

Sample: All the students of fourth and fifth year

who agree to participate in the study and who meet the selection criteria will be included in the study, with an estimated 150 students. This will provide a precision of 5%, for *a priori* a prevalence of 30%, with a significance level of 95% and a power of 80%.

Variables: Sociodemographic variables will be considered: age, gender and socioeconomic status; psychological variables: severity of BOS using Maslach Burnout Inventory (MBI)<sup>20</sup>, coping strategies using the Coping Strategies Inventory (CSI)<sup>21</sup>, perceived stress using the questionnaire Perceived Stress Scale (PSS)<sup>22</sup>, all previous Spanish versions validated, and vocational satisfaction in the dentistry degree by questionnaire of 6 questions for 3 points: career choice, current and projected after graduation.

Data Collection: There will be four stages after a first class measuring fourth and fifth year separately. A first stage when informed consent is obtained and applied MBI scales, CSI, PSS and vocational satisfaction questionnaire in March. The second (June), third (September) and fourth (November) will repeat the MBI, PSS and vocational satisfaction questionnaire.

Analysis: Data will be coded and tabulated according to the respective protocol, without including

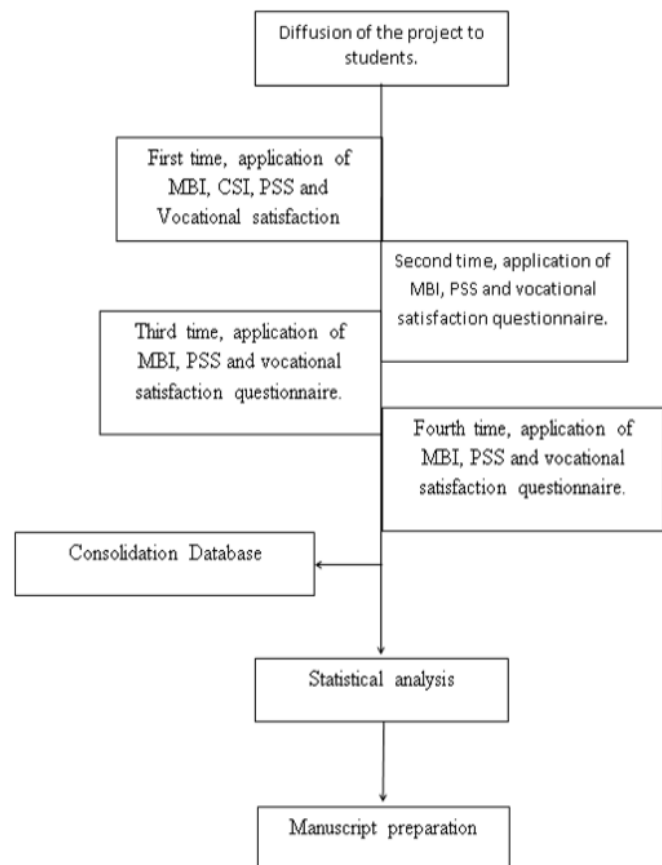


Figure 1. Flowchart.

Stage	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Dissemination to students in fourth and fifth year	X											
Application of MBI, CSI, PSS and Vocational satisfaction	X											
Application of MBI, PSS and vocational satisfaction questionnaire.				X								
Application of MBI, PSS and vocational satisfaction questionnaire.							X					
Application of MBI, PSS and vocational satisfaction questionnaire.									X			
Consolidation Database									X			
Statistical analysis									X	X	X	
Manuscript preparation										X	X	X

Table 1. Gantt chart.

personal identification. The analysis will include an exploration of the data to generate descriptive statistics: mean and standard deviation, median and interquartile range, percentage distribution and frequency. Then, tests for statistical correlation (Spearman) will be undertaken between SBO and

coping strategies, perceived stress and vocational satisfaction; of multiple linear regression models and logistics for the interaction of these variables and their influence on SBO, all tests considered a significance level  $p < 0.05$ . The tabulation and analysis will be done in STATA 10/SE

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