



## Personality traits of dental students at the FES Iztacala, National University of Mexico (UNAM)

### *Características de personalidad del estudiante de la carrera de cirujano dentista de la FES Iztacala, UNAM*

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#### ABSTRACT

Targeting the description of personality characteristics of dental students at the FES Iztacala a 16 PF questionnaire was applied to a 345 student sample. In the norm, it was found that students exhibited expected scholastic intellectual capacity in order to successfully fulfill their studies. Students showed they could appropriately related and be sociable with others, they were acceptably trusting of other people, were flexible in their behavior, were affirmative without being domineering and presented appropriate self-sufficiency to make their own decisions. As part of their positive characteristics, students proved to be objective and practical, conservative and respectful of established norms as well as able to tolerate hard or routine work load. Nevertheless, they were also careless and inconstant, and exhibited little self-control. From the second year onwards, male and female students exhibited anxiety. During the two intermediate career years, males were emotionally unstable and immature. Results were examined under the perspective of characteristics which might be changed to improve this profession as well as the strengthening of those characteristics which might allow students to efficiently fulfill their profession and thus derive benefits for themselves as well as their patients.

**Key words:** Dental students, personality, psychological assessment.

**Palabras clave:** Estudiantes de odontología, personalidad, evaluación psicológica.

The aim of all university students, including dental students, is to succeed in their career. This entails successfully completing their studies, receiving their degree, and being able to insert themselves into the labor market. Academic success depends on financial, personal, psychological and emotional factors. Financial factors imply counting with sufficient resources to cover expenditure for food, transportation, books and study materials. Personal factors would include state of health, time devoted to study, effort, dedication as well as work capacity. Psychological or emotional factors which can positively influence or negatively interfere upon academic performance are intelligence, personality, motivations, worries, stress,

#### RESUMEN

Con la finalidad de describir las características de personalidad del estudiante de la carrera de cirujano dentista de la FES Iztacala, se aplicó el cuestionario 16 PF a una muestra de 345 estudiantes. En la norma se encontró que los estudiantes cuentan con la capacidad mental escolar esperada para desempeñarse en sus estudios exitosamente, relacionándose y siendo sociables con los demás de una manera apropiada, confiando en las personas en términos aceptables, siendo flexibles en su comportamiento, mostrándose afirmativos sin ser dominantes y presentando una autosuficiencia adecuada para tomar sus propias decisiones. Como características positivas se catalogó a los estudiantes como objetivos y prácticos, conservadores y respetuosos de las normas establecidas, con capacidad de tolerar trabajos rutinarios y difíciles. Sin embargo, son también desobligados e inconstantes y poseen poco autocontrol. Mujeres y hombres a partir del segundo año de la carrera presentan ansiedad y los hombres, los dos años intermedios, son emocionalmente poco estables y maduros. Se discuten los resultados a la luz de las características que para esta profesión habría que modificar, así como el fortalecimiento de aquéllas que les permitan desempeñarse en el ejercicio profesional de una manera eficaz en beneficio de ellos mismos y de sus pacientes.

anxiety and in extreme cases depression. Poor health or concentration will elicit negative results.

Intelligence, as we all know, is one of the most significant psychological factors influencing academic success, be it from grade school or University Graduate

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Programs. Nevertheless, in the last decades, different theoretical approximations have been developed concerning human intelligence, in which credit is extended to the importance exerted by emotional and personality factors on intelligent behavior.<sup>1-4</sup>

The Spanish Royal Academy of Language<sup>5</sup> (Real Academia Española de la Lengua) defines personality as «individual differences which constitute each person differentiating him from others» and as a «Set of individual characteristics or qualities which stand out in certain people».

Etymologically the word «personality» derives from Latin: «*persona*», which in turn has Greek roots. It means glance, external aspect, appearance, image perceived by others, mask, surrounding the body (clothing) and everything used to improve public appearance, theater being its main application. Pelechano<sup>6</sup> considers that from the etymology of the word «personality» it can be deduced that one referred to «person» to express some extrinsic aspect of the human being: false appearances which concealed the reality of the human being. From these premises he concluded that human life could be compared to a theater play, and the human being could be perceived as an actor of the theater of life; his acting would correspond to his personality.

Personality represents characteristics of the individual which explain consistent behavior patterns. Personality includes cognitions (thought processes), affections (emotions) as well as open behavior. Therefore, personality concerns the complex inter-relationships encountered among these cognitive, affective and behavioral processes in each person.<sup>7</sup>

For Cattell, Eber and Tatsuoka,<sup>8</sup> personality refers to the characteristic thought, perception and action style of a subject during a relatively long period of time when facing an assortment of different situations; they subdivide personality in different traits or factors. These personality traits manifest themselves in a group of attitudes, preferences, emotional and social reactions as well as in habits; each trait has its own history and originates from a complex interaction between an inherited disposition and a learning process based on experience.

Cattell used factorial analysis to isolate and discover the 16 traits or basic factors which compose personality. He proposed the idea that relationship among these factors is additive and linear. The personality structure of each individual is thus formed and therefore, a complete description can be developed. This description includes from situational reactions up to the world of beliefs and values, also incorporating instincts, motivations and lifestyles.<sup>6</sup>

The personality of students is one of the psychological factors influencing their scholastic performance. University students, generally, and dental students particularly, are daily immersed in stressful academic situations which they must, per force, face and handle. Such situations would be evaluations, assignments, tasks and expositions. They also bear the responsibility of fulfilling demands of attention and concentration when interacting with patients. There is no doubt that their academic performance is contingent upon their personality traits. We therefore considered that determination of student personality traits could provide us relevant data to better understand their academic performance.

With respect to the professional profile of dentists graduated from the National University of Mexico (UNAM), the UNAM schools teaching dental careers proposed the following professional profile:

- According to the School of Dentistry, within the scope of the Study Plan (approved by the University council on July 16<sup>th</sup> 2003),<sup>9</sup> the dentist is «the professional responsible for oral health. He contributes to the preservation and restitution of the general state of health of individuals and communities. To this end, he applies scientific and technical principles with sensitivity and understanding of human problems».
- The School of Higher Education Zaragoza, in its Study Plan approved by the University Council on December 8<sup>th</sup> 1997,<sup>10</sup> established the following: «We conceive the dentist as the professional expert able to comprehensively tackle the Stomatognathic System health-disease processes through a combination of multi-and inter-disciplinary work of theoretical and applied knowledge. This allows the development of a comprehensive medical practice in its three dimensions: production of knowledge, production of services and human resource training».
- Finally, for the School of Higher Education, Iztacala Campus (FESI) the Study Plan approved by the University Council on March 12<sup>th</sup> 1993 mentioned:<sup>11</sup> «Dentists are health professionals in charge of dealing with stomatological conditions, with emphasis on problems that bear epidemiological relevance in the country. They achieve this aim with preventive, therapeutic and rehabilitating measures, and exhibit scientific, technical, humanistic and critical knowledge».

The following objectives were set out for FESI Dentistry Graduates:<sup>12</sup>

- Application and understanding of different scientific method phases.

- Development of activities destined to prevention, promotion, restoration and maintenance of oral health of individuals and the community.
- Possession of habits and skills related to multi-disciplinary team work.
- Possession of ethical conscience related to professional endeavors, and responsibility towards the community which they will serve as a function of dental personal and collective growth.
- Ability to conduct their professional work within the ethical, moral and legal values which are the foundations of Dentistry.
- Ability to exhibit a holistic vision of life so as to be able to integrate learning and abilities of any kind.
- Ability to perform community service where they can enfold and apply skills and knowledge acquired along their professional training.
- Ability, as members of the health team, to be able to entirely promote, prevent, preserve, diagnose, rehabilitate and control the stomatognathic system health-disease processes, offering timely care to the community.

As we have thus been able to observe, the final goal of the Dental Career is to preserve and reconstitute oral health by means of technical and scientific knowledge, in addition to contemplate, within the students training, values such as understanding, sensitivity and humaneness. Consistent with the aforementioned, the aim of the present research paper was to describe the personality characteristics of dental students at the FESI, with the aim of detecting and strengthening characteristics deemed ideal for the satisfactory development of their profession in the future, and otherwise, to undertake preventive and corrective actions.

**METHODS**

**Population:** The sample of the present study was selected by strata. The sample was composed of

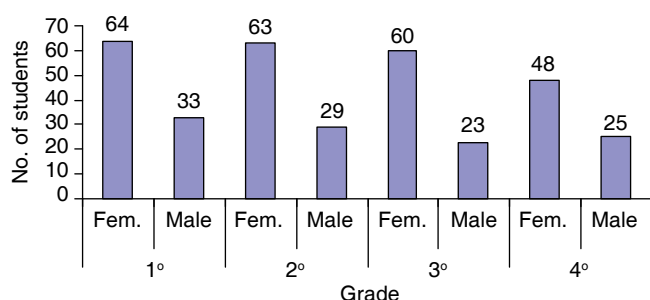
345 dental students, from 1<sup>st</sup> to 4<sup>th</sup> year (15% of total student population). 235 were female (68.12%) and 110 were male (31.88%). The sample was composed of 97 students belonging to 2<sup>nd</sup> semester, 92 students of 4<sup>th</sup> semester, 83 students of 6<sup>th</sup> semester and 73 students of 8<sup>th</sup> semester (*Table I and Figures 1 and 2*). The sample consisted of a selection of 8 groups of the morning shift (2 students per semester) and 4 groups of the evening shift. This was due to the fact there were more groups in the morning shift than in the evening one. Although this sample was not randomly selected, we believe the studied percentage (15.33%) was a sizeable proportion. Besides, in the sample, at least one group from the 8 FES dental clinics was selected, starting from the 2<sup>nd</sup> year. Nevertheless, we could consider the sample a true representation of the Dental Career Students, it would rather be a very approximate sample of the population.

Cattell, Ebel and Tatsuoka's<sup>8</sup> Questionnaire of 16 Personality Factors (16 PF) was collectively applied to all selected groups in their classroom. Professor and student authorizations were previously requested and granted. Students were informed that responses would be anonymous, and they were not requested to write their names on the questionnaire. Once applied, the instrument was rated and data were entered in the computer. With the help of SPSS v. 15 program, averages were obtained for all traits, according to gender and semester, so as to later conduct results description and analysis.

**Instrument:** Questionnaire of 16 Personality Factors (16 PF) was selected to assess personality, characteristic style of thought, perception and action of an individual through a relatively long period of time and facing a wide range of different situations, through 16 traits or factors. These personality traits were expressed in a group of attitudes, preferences, social and emotional reactions as well as habits.

**Table I.** Frequency and percentage of students from first to fourth year of the Dental Carrer (DDS).

Year	1°		2°		3°		4°	
	F	M	F	M	F	M	F	M
Frequency	64	33	63	29	60	23	48	25
Total frequency per school year	97		92		83		73	
Percentage per school year	28.12		26.66		24.06		21.16	
Total % males	31.88							
Total % females	68.12							



**Figure 1.** Student frequencies according to gender and academic year.

Three reasons prompted us to select the present test for our study:

- 1) It is a quantitative test to measure personality; therefore it can be collectively used to achieve a personality profile of the Dental Student.
- 2) In his questionnaire, Cattell established a position of continuity between normal and abnormal. That is to say, normality and abnormality represented two poles of a continuum whose difference is degree and quantity, not quality. Therefore, the psychiatric categorical diagnosis did not possess utility (usefulness) in its personality theory.<sup>6</sup> We thus considered that 16 PF measured a healthy personality, and the combination of the different traits is what can give a categorization of disease.
- 3) Cattell, Eber and Tatsuoka<sup>8</sup> established the fact that the instrument possessed suitable predictive ability with respect to the criterion of daily life. They supported this statement through intertwined research conducted by them over a 25 year span. Moreover, there are specific norms for Mexico. We have satisfactorily used these norms for 16 years at the Iztacala Psychological Evaluation Unit. In the last five years we have used them in the assessment of students applying for admission to the Orthodontics and Endodontics and periodontal dental Specialties offered at the FES (Higher Education School) Iztacala. For two years these norms have equally been applied to candidates for admission at different specialties offered by the National Pediatrics Institute. The norms have proven to exhibit a suitable predictive power.

*Table II* depicts the 16 traits assessed by the test. Each trait or factor is qualified in a normative

**Table II.** Personality factors of 16 PF Questionnaire.

Factor name	Description
A	Emotional expressiveness
B	Intelligence
C	Emotional stability
E	Dominance
F	Impulsiveness
G	Adherence to social norms
H	Sociability
I	Emotionality
L	Confidence
M	Cognitive
N	Subtlety
O	Self-assurance
Q1	Conservatism
Q2	Self-sufficiency
Q3	Self-control
Q4	Anxiety

scale from 1 to 10 (decatypes). In an individual evaluation, decatypes 1, 2, 3 correspond to the factor's negative pole (15.9% of population with lower scores). Decatypes 8, 9 and 10 correspond to the positive pole (15.9% of population with higher scores). Decatypes 4, 5, 6 and 7 represent intermediate scores (obtained by 68.2 % of total population). Nevertheless, since this is a collective assessment and decatype scores were averaged by gender and year of study, decatypes 5 to 6.99 were considered intermediate scores, decatypes 1 to 4.99 were considered negative pole and decatypes 7 to 10 were considered positive pole.

## RESULTS

We hereby present results obtained when applying 16 PF to the sample under study. We firstly present factors globally found in intermediate scores. After this, we will analyze data according to academic level. We will describe personality characteristics of men and women, and will establish a comparison. Finally, we will establish a global data comparison of all men and all women though different school years. *Table III* depicts average decatypes obtained in each of the 16 factors, by school grade, in men and in women.

### Personality factors in the norm

In the studied sample, the following factors were found: Factor A (emotional expressiveness), B (intelligence), E (dominance), H (sociability), L

**Table III.** Average decatypes obtained according to factor, gender and academic grade.

Factor/grade	Females				Males			
	1°	2°	3°	4°	1°	2°	3°	4°
A	5.58	6.11	5.53	5.60	5.30	5.28	5.18	5.46
B	6.60	6.74	6.73	6.85	7.00**	7.41**	6.41	6.67
C	5.00	4.35*	5.44	5.40	5.50	4.41*	4.86*	5.38
E	5.50	6.03	5.71	5.06	5.60	5.76	6.14	5.58
F	6.70	7.66**	6.64	6.74	6.40	7.07**	6.23	6.13
G	4.40*	4.48*	4.31*	4.70*	3.60*	3.45*	3.09*	4.08*
H	6.00	6.13	5.54	5.72	5.00	5.62	5.05	5.21
I	6.70	6.90	6.10	6.04	6.70	6.72	7.00**	7.08**
L	5.11	6.10	5.71	5.06	5.32	5.90	5.59	5.29
M	3.70*	3.73*	3.86*	3.79*	4.30*	4.69*	4.64*	4.92*
N	4.70*	4.63*	5.07	3.80*	3.76*	4.14*	4.14*	3.50*
O	4.50*	5.32	5.17	4.32*	4.50*	4.38*	4.64*	4.50*
Q1	3.60*	4.74*	4.07*	4.19*	3.80*	5.38	4.73*	4.38*
Q2	6.30	6.10	5.75	6.19	5.90	6.41	6.18	6.25
Q3	4.90*	4.39*	4.98*	4.74*	4.80	3.83*	4.09*	4.75*
Q4	6.58	7.74**	7.24**	7.11**	6.97	7.31**	7.00**	6.71

Asterisks indicate that the value belongs to negative pole (\*) or positive pole (\*\*).

(confidence), and Q2 (self-sufficiency). As was to be expected, these factors characterize dentistry students as possessing suitable intelligence and academic mental ability to undertake their studies and profession. They suitably relate to each other, they are participative, and generally exhibit good character. They are not reserved or cold, neither are they too affectionate or complacent. They are suitably sociable, do not show timidity or withdrawal, but neither are they too sociable, tending to be exhibitionists. They trust people in an acceptable degree. They are not too trustful but neither are they distrustful or suspicious with people they deal with. They do not try to be domineering and obstinate in their relationships with others, but neither are they submissive nor docile. They exhibit flexible behavior and are suitably affirmative. Finally they do not depend on others, they are self-sufficient to an acceptable degree. Nevertheless, they are not individualists to the point of not accepting advice or help from others. They are adequately self-sufficient so as to make their own decisions.

In six of the eight sub-samples, factors F (impulsiveness) and I (emotionality) were found in the norm. This means that, in general terms, dental students are not too prudent and cautious towards life, but neither do they act in a precipitous and carefree fashion. They present suitable sensitivity: they are not

un-sentimental and severe but neither are they too sensitive and emotional.

Finally, Factor C (emotional stability) was found in the norm in five of the eight sub-samples. This indicated that most students possessed sufficient emotional stability to suitably face reality and adapt to it: they exhibited appropriate tolerance to frustration and did not allow their emotional needs to darken reality, in a certain manner, avoiding thus difficulties and suitably solving their problems.

#### Personality factors according to academic level

Profile shared by males and females in the first year of university studies is: G-M-N-O-Q1. This means that dental students in this cycle are conservative and respectful of ideas and established norms. They can prevail in difficult situations and they tolerate routine work. They are practical and objective, with genuine concerns, with a practical orientation of the «here and now». They are interested in facts as they occur in the moment. They are very frank, not very diplomatic, sure of themselves. Nevertheless, they are inconsistent and little drawn by obligation.

In this cycle, males are characterized by being more intelligent, with greater academic mental ability (B+) than females. Females exhibit low degree of self-control and willingness (Q3-).

In the second year, profile shared by males and females is: C-F + G-M-N.Q3-Q4+. Like the previous year, they are objective and practical, with real concerns; they are very straightforward and not very diplomatic. They are not very concerned about their obligations and are equally inconsistent. Moreover, this cycle presents them as impetuous and impulsive. They act in a precipitous and unconcerned fashion; they exhibit little self-control and willpower. They generate a great assortment of alternatives, but rarely put them into practice. They act on a whim, and are not able to undertake actions even though they know what to do to solve a problem. During this year they can be observed as emotionally unstable and immature, with little tolerance towards frustration and evading responsibilities. Moreover they present great amounts of stress and anxiety.

Males are still more intelligent and with greater academic mental capacity (B+) than females. Males are very sure of themselves (O-) while females keep on being conservative and respectful of established ideas and norms, they can prevail under difficult situations and tolerate routine work. Moreover, they keep exhibiting a practical orientation of «here and now» and are interested in facts as they exist at that particular moment.

During the third year shared profile is G-M-Q1-Q3-Q4+. This characterizes them as conservative and respectful of established ideas and norms. They can prevail under difficult situations and tolerate routine work. They are objective and practical, with tangible concerns, and practical orientation of «here and now». Their interest lies in facts such as they occur in the moment. Nevertheless, they fail to recognize obligations, are inconsistent and possess little control and willpower. They are not able to carry out actions even when knowing what to do to solve a problem. They still exhibit high levels of stress and anxiety.

Males are still straightforward and not very diplomatic. They are sure of themselves, although emotionally, they are unstable and immature, unlike females, who now possess sufficient emotional stability to realistically face frustrations and problems. In this semester as well as in the following one, males no longer appear more intelligent than females, in fact, they are on an equal footing.

Finally, in the last year of the dental career, the shared profile of dental students is G-M-O-Q1-Q3. This profile defines them as sure of themselves, conservative and respectful of established norms and ideas. They can prevail in difficult situations

as well as tolerate routine work. They still are objective and practical with real concerns, and a practical orientation of the «here and now». They are interested in facts such as they exist in the moment. It should be noted that in this last year of the dental career, males and females are within the norm in Factor C, that is to say, they possess sufficient emotional stability to realistically face problems and frustrations. They are well adapted, nevertheless, they still fail to recognize obligations, are inconsistent, and present little self control and will power.

Males in this year are more sensitive and emotional than females, they still are very straightforward and undiplomatic, females still present tension and anxiety.

#### **Personality factors according to gender**

It is worth noting that, as far as gender is concerned, females of all the studied samples were conservative and respectful of established norms and ideas. They could prevail in difficult situations, tolerate routine work, were objective and practical, with down-to-earth concerns and with a practical orientation of the «here and now». Nevertheless, they were little inclined to recognize obligations, were inconstant, and possessed little control and self-power. From the second year of the career onwards, they exhibit stress and anxiety; only during the first half of the career are they too straightforward and undiplomatic. When they initiate their career they are sure of themselves. During the two years following this, they are found within the norm of this factor, during the last year of the career they again experience security and self-confidence.

In all the samples men are objective and practical, with down-to-earth concerns, very straightforward and undiplomatic. They are very self-confident but also unconcerned with obligation and inconstant. During the last three years they exhibit little self-control and willpower. During the first third and fourth years, they are characterized by being conservative and respectful of established norms and ideas. They can prevail in difficult situations and tolerate routine work. During the first half of the career they are observed to be intelligent, possessing high academic mental capacity. During the two intermediate years, besides being immature and emotionally unstable, they also exhibit stress and anxiety. During the last two years they are observed to be sensitive and emotional.

### Global personality factors

There are two factors present, in males and females, all along the career. We could say these factors are the personality characteristics of dental students: G-M, which defines them as very objective and practical, with down-to-earth concerns, although inconstant and unconcerned with obligations. Nevertheless, two other factors were present in seven of the eight sub-samples: Q1-Q3. These factors characterize students as conservative and respectful of established norms and ideas, able to tolerate routine and difficult work, but nevertheless possessing little self-control and willpower.

### CONCLUSIONS AND DISCUSSION

DDS students must possess certain indispensable characteristics for their future professional development, bearing in mind that their work will mainly deal with people. Within these characteristics, the present study revealed that students were sociable, and suitably related to people. They trusted people appropriately, were neither docile nor dominant, and were self-sufficient enough so as to make personal decisions, but not to the point of not accepting advice or observations. They also possessed the required intelligence to successfully complete their studies.

Other ideal characteristic which would assist them in their professional performance was the fact that most students exhibited emotional stability, were objective and practical, with down-to-earth concerns, as well as conservative and respectful. This can be explained when considering the example provided by their teachers.

At the beginning of the dental career, it was noteworthy to observe that males exhibited little emotional stability, little tolerance to frustration and evasion of responsibility. Nevertheless, in the latter years of the dental career, they reached the necessary maturity, and this represents a very important factor for health professionals. It is perhaps a combination of the following factors which contribute to the students' emotional maturity: age (21 years at least), one year's experience of dealing with patients, the fact of being in the middle of the career, therefore closer to facing the challenge of completing it, receiving their degree and commencing their professional life in the labor market. Nevertheless, we consider we should not passively wait for «things to improve with time». We should start working from the moment the dental career begins for students, that is to say, future dentists, they must become mature and emotionally stable, suitably facing

problems and handling frustrations, adjusting to real facts, avoiding difficulties, actively participating in the solution of their problems and not allowing their emotional needs to obscure reality. In the long run, this would not only benefit the students, but also the patients they treat.

Unfavorable characteristics found in the present study were that students exhibited little self-control and ignored obligations. This might be due to the fact that students have other priorities which, for them, precede studies. Teachers have encountered difficulties when asking students to accomplish tasks in a timely manner. This was especially the case for basic subjects which students do not appreciate since they find no immediate application for them.

Another characteristic exhibited by females is the fact that, at the beginning, they are very straightforward and undiplomatic. This trait favorably changes at the end of the career since they have to deal with patients. This is very important especially when disclosing a diagnosis or explaining recommendations to patients or their relatives. From the second year onwards, females exhibit stress and anxieties. This can be related to the fact they are progressing to actual clinical situations during the third semester, and being subjected to pressure to treat a certain number of patients in order to accomplish tasks required by the teachers. This patient «hunt» could be solved with internet campaigns or with flyers to promote their services. Another factor for this stress could be the fact that women, besides this concern, could have other concerns such as obligations at home, or even having to work in order to afford such an expensive career.

We would propose that, along with curricular subjects, students could avail themselves to workshops on how to establish strategies in order to be more responsible, possess more self-control and suffer less anxiety.

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