

# Stages of Moral Development Among Brazilian Dental Students

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*Abstract:* This research study aimed to evaluate the level of moral and ethical development of first-year students in a dental school. The students were presented with a dilemma that touched on personal and conflicting values. In responding to the questions posed, they had to present their criteria for judgments and norms that directly influence their behavior. Answers were then analyzed, leading to the categorization of interviewees into five stages of moral development according to Kohlberg's moral development system. The first, lowest stage in Kohlberg's system was reached by 11 percent of students. Most interviewees (47 percent) were in stage two, where individuals are conscious of their own conflicting interests, but an individualistic and instrumental set of morals tends to regulate those interests. Thirty percent of interviewees were identified with stage three, and 8.3 percent were found in stage four, whose main characteristic is the perception of self as a member of society, thus integrating interpersonal perspectives. Only one student reached stage five, in which the person recognizes universal rights and establishes a hierarchy of priorities. No individuals were found in stage six of moral development. The level of moral development found was low for students at this level, which may compromise the optimal moral development of the future dentist. The low level of moral development found may jeopardize the work of the future professionals, their treatment of patients, and society as a whole.

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A large number of publications and academic papers deal with the subject of dental education and development in Latin America. (The term “development” is used in the sense of a more comprehensive, broader preparation to be a professional in a particular field, involving a variety of activities such as but not limited to acquisition of information and exposure to various situations that characterize the academic experience, such as the ethical teachings passed by the university, through faculty and other members, onto the student.) In Brazil, the curriculum in dentistry has historically been considered inadequate in relationship to the country's economic and social reality. It has consistently been pointed out that the curriculum needs to be more humanized and more ethically oriented and that relatively little time has been allotted in the curriculum to stimulate social criticism. Also, a disconnect between educational institutions and communities has

been persistently denounced in the literature analyzing Brazilian dental teaching.<sup>1-3</sup>

Traditional curricular structures of dental schools in Brazil have been largely criticized for ignoring such important issues as humanization and ethics. This is the usual starting point for curricular rearrangements of educational courses that aim to train professionals who are concerned with ethics and community needs. Although some advances in the development of health professionals have occurred in Brazil, this progress has not been sufficient to cause an effective change in terms of advancing the agenda of health promotion and disease prevention, which have been declared as the new paradigms for the reconstruction of the national health system, thereby substituting a strategy that was more purely related to the treatment of diseases.<sup>4</sup> What is gradually becoming clear is the necessity for more in-depth studies, especially concerning the subjective aspects related to the training and de-

velopment of dental professionals. An agenda that prioritizes such studies may contribute to a better understanding of how new dental professionals can be prepared to meet the challenges of their daily practices, how they perceive their social roles in these practices, and how their ethical and moral education influences their professional lives.

Discussion of the meaning of the terms “ethics” and “morals” is endless; some authors consider them synonymous and others don’t. For the purpose of this article, the use of the term “ethics” is limited to the explicit codes, norms, and rules of conduct contained in different professional codes of ethics.

Kohlberg’s theory of moral development contrasts with approaches that see moral development as a result of socialization or social learning.<sup>5</sup> Kohlberg contends that moral development, as a part of personality formation, follows a sequence of six stages through which a person passes one step at a time. The development of moral stages, according to him, depends on the evolution of logical reasoning or intelligence, as studied by Piaget.<sup>5,6</sup> The achievement of the highest degrees of moral development relates to the achievement of the highest degrees of reasoning, which in the Piagetian system means the stage of formal operational thinking. In this stage, one can reason abstractly, consider all possibilities, consider the relations between elements in a system, form hypotheses, deduce implications from the hypotheses, and test them against reality.<sup>5</sup> Many adolescents and adults only partially attain the stage of formal operations. They may be able to consider all relations of one thing to another at the same time but have problems in considering all possibilities and in forming abstract hypotheses. Also, almost no adolescents and adults will remain entirely at the stage of concrete operations; many will be at the stage of partial formal operations.

By combining Piaget’s and Kohlberg’s theories, we can conclude that since moral reasoning is reasoning (i.e., logical thinking), advanced moral reasoning depends upon advanced logical thinking. However, logical development is a necessary but not a sufficient condition for moral development. The achievement of a high degree of logical reasoning does not necessarily guarantee the achievement of a high degree of moral development.<sup>5</sup>

Other authors have formulated theories on moral development; Freud,<sup>7</sup> for example, sees the construction of the superego as an important stage of personality development. Still others have dis-

cussed morals and ethics in education and pointed out some of the consequences for the development of professionals.<sup>8,9</sup> A vast literature has been produced since the 1970s characterizing bioethics as an emerging force in the conceptual repertoire for moral education in the health arena, and humanization has been defined as key to promoting the conjunction of ethics, bioethics, and professional education. Some authors have emphasized the role of personal, individual development, based upon traits of personality, while others emphasize the role of social, collective norms in shaping the ethical and moral development of professionals.<sup>10</sup> The situation is one of many perspectives, of a sometimes heated public debate, and certainly, for professionals in the health field, a source of anxiety regarding their moral and ethical responsibilities.

The debate over morality and ethics is particularly important for decisions about issues that most of the time are not explicitly discussed in the dental curriculum, such as success, power, prestige, responsibility, frustration, commercialism, and a variety of attitudes and behaviors involving the professional in relation to clients and institutions. Some of these issues have achieved a high degree of visibility in academia and in the community at large. Some debates have been exacerbated by the relatively recent emergence of a secular morality that has allowed for some disconnection between morals, ethics, and theological tradition, particularly in the West. One consequence has been the consolidation of philosophical positions denying the existence of a universal morality.<sup>11</sup> Even when the secularization of society is advanced, a perception of a universal and rational nuclear concept of morality aligned with the basic premises that provide for a collective understanding of human rights is still common. This has been reflected in the United Nations’ Universal Declaration of Human Rights.<sup>12</sup> In that sense, one of the pillars of Western social life is a sense of the rights of others and a sense of respect for the rules protecting life, conceived as a collective, social enterprise.

Thus, to accept a collective definition of what constitutes moral behavior means not only to obey rules, laws, and norms but also to understand and incorporate concepts woven into the context of cultures and perpetuated through education. It also means to reflect on the reasons why we do or do not do certain things. Such endeavors are mediated by moral judgments according to what is explicitly or subtly determined by a majority. Moral development,

in this way, is not necessarily driven by obedience to social rules and is not dependent only on people's customs but by a complex combination, among other things, of personal and cultural heritage, philosophical systems, social structures, education, religion, law, and customs.

The attitudes and behaviors of health professionals in response to daily situations and to moral and ethical dilemmas are, therefore, subjected to strong historical, social, and cultural influences that shape professional-patient and professional-community relationships and determine their degree of commitment to collective health. The philosophical positions behind the paradigms and styles adopted by professionals define their interest in health promotion and disease prevention. The interconnection of these influences, paradigms, and styles is, to a great extent, responsible for the construction of the professionals' personal, educational, social, and cultural identity. This web of macro- and microrelationships admits many political and ideological perspectives.

We contend that, to advance the curriculum and training of dental students, it is important to learn about the students' historical, social, and cultural identity and about their characteristics as persons, citizens, and professionals. One way to achieve this is to learn about their "social conditioning," as the phrase is used by Bourdieu.<sup>13</sup> Bourdieu argues that one's school career, which he also refers to as *cursus*, acts primarily as a factor for social legitimacy and not as a factor of mobility. In his view the school system conditions the person-to-be and is not an arena of equality, where everyone has an equal chance to succeed, but instead is a means of perpetuating social inequities masked by the false discourse of equality and universality. Corroborating his views, Bourdieu conducted a study in France in the 1960s, showing that a young person of high social level had eighty times more likely to be admitted to a university than a rural employee and was forty times more likely than a factory worker's son. These findings are still relevant, as more recent research studies have continued to point out these differences in access to higher education, in most Western countries.<sup>14,15</sup> For Bourdieu, educators hold great responsibility with respect to the situation of inequality in the access to the school system. He also argues that not only inequality in the school system must be denounced, but it is necessary to describe the objective mechanisms that determine the constant elimination of the disadvantaged children.

Bourdieu's theory helps us to understand that when talking about students of dentistry, we are talking about a group that is socially, historically, and economically determined, one that has faced a long selection process from birth to entering the university. We are therefore talking about a group that may also share certain beliefs, attitudes, and behaviors including those of an ethical and moral nature. In that sense, we may find certain moral and ethical commonalities among dental students of public universities, just as we may find such commonalities among students of other disciplines or, for that matter, among any groups that are selected on the basis of class, ethnicity, and other kinds of cultural, economic, or social background.

On the basis of the above concepts and premises, we designed a research study to evaluate the level of moral and ethical development of first-year students enrolled in a dental school in the southern state of Santa Catarina, Brazil. The study also attempted to speculate on the selective social process that, with time, continues to take place during students' school days and most probably for the rest of their lives and that can be characterized as a continued social conditioning process. In so doing, we hope to promote a reflection, on the part of faculty, health professionals, and particularly dental students, that may contribute to the better development and training of these students, to the advancement of the curriculum in dentistry, and to the betterment of other aspects of the academic experience in the context of dental school training.

To deepen discussion of the formation of human resources in the health field, this article aims to analyze moral and ethical aspects involved in the education and training of dentists in Santa Catarina, Brazil. We are aware that the moral and ethical issues considered transcend dental education and can be related to the more comprehensive aspects of the human condition.

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## Methodology

A previous research study with dental students in their final semester suggested that dental education alone does not guarantee a standard of morals and ethical principles that need be applied to professional practice.<sup>16</sup> Based on those findings, this study utilizes the methodology proposed by Colby and Kohlberg,<sup>17</sup> which provides for assigning points in

each phase of moral development and for assigning a final score based on those points. A modification was made for this study: the definition of values, norms, and stages was done only with qualifying procedures, without the adoption of a points scale. These procedures are described in detail below. Also, we used only five stages of Kohlberg's moral development theory, because Kohlberg himself has suggested that the sixth stage exists only as a hypothesis, meaning very few people attain the highest stage of moral development and, when they do, it is later in life. If this is true for the general population, it seemed only reasonable that we did not need to use stage six for our research subjects, who were still too young to have attained that stage.

The Brazilian educational system is structured in three levels: the first, known as basic education, has eight years. The second, the middle level, has three years; and the third is the equivalent to earning a college or university degree and, depending on the course, has four (e.g., literature) to six years (e.g., medicine). Around seventeen years of age, students finish the second degree and, if they want to proceed in the educational ladder, they must choose a professional career. To be admitted to the public or private university system, they must pass a national examination.

The dental curriculum has at least 4,000 hours with, on average, four and a half years of coursework. The emphasis is on curative practices, techniques, and procedures, including laboratory and clinical fieldwork. Dental school graduates in Brazil are primarily prepared to provide care for individuals in the context of private practice. Brazilian dentists typically receive their license at the age of twenty-three to twenty-four.

In our study, thirty-six volunteers (nineteen females and seventeen males), out of a class of forty-two first-year dental students aged between seventeen and twenty-five years, were informed of the objectives of the study and interviewed in the first school trimester of the first year. The other six students were not interviewed due to schedule difficulties. The study was approved by the university's ethics committee. A pilot study with twenty dental students who were at a higher level of training was conducted previously. In the pilot study, two of the researchers conducted the interviews and analyzed the data after being trained by the lead researcher in Kohlberg's analytical method. Tape recording was used in some of the pilot interviews while in others, for the sake of comparison, the interviewers took written notes. After analyzing both

types of data collection, it was concluded that tape-recording was not essential. The two researchers analyzed the data collected separately and agreed in 100 percent of students about the interviewees' stages of moral development.

## Procedures and Techniques

To evaluate an individual's level of ethical and moral development, the Kohlberg methodology directs that interviewees must be exposed to some situations characterized by dilemmas involving conflicting values and principles. One of these dilemmas, referred to as the life/law dilemma, was chosen for this study because it deals with values related to the future professional practice of students.

The following situation was read to the interviewees:

In Europe, a woman was about to die of a very special type of cancer. There was a medicine that, according to the doctors, could save her life. It was a type of medicine that had been recently discovered by the city's pharmacist. The medicine was so precious that the pharmacist charged ten times more than his cost to produce it. Production cost was 200 reais [Brazilian currency; current exchange rate (March 2005) is about R\$2.70 for U.S. \$1.00], but the pharmacist charged 2,000 reais for a small dose. Henrique, the patient's husband, asked his acquaintances to lend him money and tried all possible legal means, but he got only 1,000 reais. He told the pharmacist that his wife was dying and asked him to sell the medicine to him at a low cost or to allow him to pay later. However, the pharmacist answered him that he had discovered the medicine and he had to make money with it. Henrique became desperate and he went into the drugstore and stole the medicine for his wife.

After the reading, the students were asked the following questions:

1. Should Henrique steal the medicine?

1A. Why or why not?

2. (This second question was optional, complementary to the first, and aimed to find out how the student would justify a moral

judgment over the situation.) Is it good or bad that he steal the medicine?

2A. Why is it good or bad?

3. Has Henrique a duty or an obligation to steal the medicine?

3A. Why or why not?

4. If Henrique does not love his wife, should he steal the medicine?

4A. (If the subject is in favor of not stealing) Does it make any difference, for the purpose of stealing or not stealing, if Henrique does or does not love his wife?

5. Imagine that the person who is dying is not his wife but a stranger. Should Henrique steal the medicine for a stranger?

5A. Why or why not?

6. Imagine that it is an animal that is dying. Should Henrique steal the medicine in order to save the life of an animal?

6A. Why or why not?

7. Is it important to do the best in order to save another person's life?

7A. Why or why not?

8. Is Henrique acting against the law for stealing the medicine?

8A. Why or why not?

9. Should we do anything within our power in order to obey the law?

9A. Why or why not?

In certain cases the interviewer would extend the line of questioning. This could happen either when a student would not provide an answer considered sufficient or when the answer was considered evasive or out of focus. Also, the interviewer could try to deepen the analysis.

## Analysis of the Answers

The content of the dilemma presented can be divided into the following categories: values, norms, and judgment elements or criteria. The interaction among those categories made it possible to classify each interviewee into a specific stage and further into substages of moral development. For a correct analysis of the stage, it was necessary to evaluate the student's explanation for choosing a specific course of action. This is why it is important that the interviewees explain their choice and argue in favor of it.

Based upon the content of the interviews, a qualification procedure was adopted: which of the two values (life or law) exposed in the dilemma was the subject was inclined to follow? In other words, what value did the interviewee prioritize in his or her answer: right to life or obedience to the law? This is the "chosen value." In case of extensive reluctance on the part of a student to prioritize, the interviewer would try to help by providing for more in-depth examination of the issue but at the same time trying to not interfere in the decision. This was done, for example, by bringing out facts and concrete examples. When there was a change in the choice of value during the answers, the last one chosen was taken as the student's choice.

The explanation and arguments presented by the interviewees to support their positions formed the norms. These norms were categorized as life, property, truth, affiliation, erotic love/sex, authority, law, contract, civil rights, religion, consciousness, and punishment.

The judgment elements or criteria are the ethical motivations that led to the justification of the answers; these refer to the structure of reasoning. They are:

- a) egoistic consequences: good reputation, search for reward;
- b) utilitarian consequences: good individual personal results, good outcomes for the group;
- c) idealistic consequences: protecting character, protecting self-respect, helping society, promoting human dignity; and
- d) justice: balancing perspectives, reciprocity, maintenance of equity, respecting the social contract.

Having collected the data resulting from the values chosen, norms, and judgment elements or criteria, we proceeded to a qualitative analysis of the material, which differs from the numerical scale that

is usually recommended while using this technique. In our analysis, the students were divided into one of Kohlberg's five stages of moral development according to their options and the way they defended and explained their positions, as follows (Figure 1).

**Stage one** is characterized by unilateralism, manifested by defining justice in terms of power and status. Moral rules are applied according to an absolute and/or literal manner and not by considering specific circumstances or different perspectives. Jus-

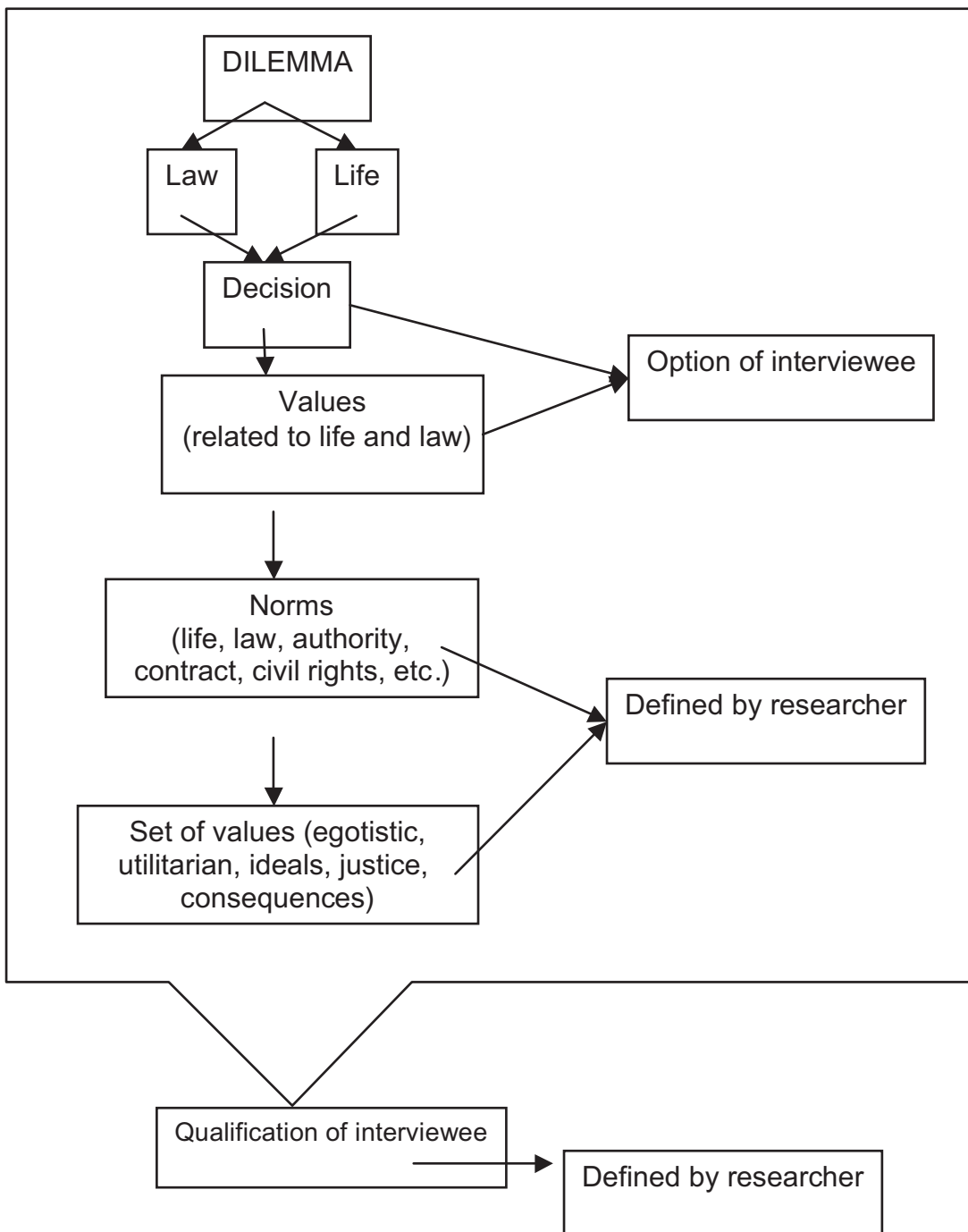


Figure 1. Flow sheet for data collection and definition of stage of moral development

tification of actions is based on determination of labels or affirmation of rules. There is no differentiation of distinct viewpoints in analyzing a situation, as in these examples of answers:

Should Henrique steal the medicine? “No, because it is forbidden by law. Stealing is always wrong; there is no exception.”

But even for saving his wife’s life, should he not steal? “No, because he could be arrested and go to jail.”

**Stage two.** In this stage, conflicts are resolved through direct exchanges by treating individual interests in strictly equal forms. Individuals in this stage guide their actions according to the saying “Do to others what they do to you or what you expect them to do to you.” Here are some examples of these students’ answers:

“Henrique should steal the medicine because some day his wife could return the favor.”

“Henrique must not steal the medicine because the pharmacist worked to develop it and can do whatever he pleases with it.”

**Stage three** adopts the perspective of a third person, overcoming instrumental individualism and assuming a set of shared norms expected to be followed by all. The individual believes that it is important to attend to other people’s expectations. He or she wants “to be a good person” in the eyes of the others. It is in accord with the saying “Do to others what you want them to do to you.” Here are some examples:

“Henrique must steal the medicine because his wife is dying and he must help her. But even if she was not his wife, the ideal would be also to steal because we have to do good to others.”

Should people do everything possible in order to save another person’s life? “Yes, because life is very important. I would like that people would do this to me if someday I would need help.”

**Stage four** adopts the perspective of a member of society who perceives himself or herself within the context of a social system that admits procedures that are impartially applied to everyone. When at stage four,

subjects usually manifest preoccupation with coherence and impartiality. The individual judges situations in accord with his or her function in society. Here are some examples of students’ statements:

“Henrique must steal the medicine because the life of his wife is more valuable than medicine and money.”

And should he steal if it was for a stranger? “Of course. Everybody wants to live and everybody has the right to life and this is more important than the pharmacist’s ambitions.”

Is Henrique going against the law? “Laws are important to avoid a big mess, but we need to place an issue in a proper context. For society, it is more wrong for the pharmacist to abuse the people.”

**Stage five** judges the validity of laws and social systems according to the degree of respect to universal human rights. It admits the recognition of universal rights and the establishment of a hierarchy of priorities. There is a great deal of preoccupation with minorities and social welfare. One student said, for example:

“The wife has the right to live and Henrique should steal the medicine. Her right is above the supposed right of the pharmacist’s profits. Law defends private property too much, which is unjust and must be changed. Even though she has no money she has a right to live.”

The validity and reliability of Kohlberg’s methods are well established in the literature since they have been tested in several countries, under various social and economic conditions, and in more than twenty-six different cultures.<sup>18-21</sup> However, limitations and difficulties have been pointed out. Critics have cited the ethnocentric bias of the instrument— influenced by the predominance of Western culture— which makes it difficult for the researcher, who is inherently culturally biased, to define the moral stage of individuals in local cultures. Also, the canons of justice reflect a perspective based upon values that are traditionally gender-biased, reflecting a predominantly male perspective. Some authors point out that women, unlike men, tend to subscribe to an “ethics of care.”<sup>22-24</sup>

## Results and Discussion

Initially, we analyzed the data in our project according to the values chosen by the respondents throughout the interview. As shown in Table 1, the majority (36.1 percent) adopted life as the chosen value, followed by law (30.6 percent). The remainder did not clearly choose one or another value, but shifted between life and law according to the question.

The distinction between heteronomy and autonomy characterizes the two substages of moral development. Heteronomy is characterized by having actions controlled by others' conventions, which are absorbed in a noncritical form and assumed as absolute truths due to external pressure or for reasons of social adequacy. Action, or the lack of action, results from reflection on immediate consequences and is imposed on an individual by external forces of influences. By contrast, an autonomous action is characterized by comprehension and agreement with the external convention as well as with its universality. In heteronomy, one's obedience is due to pressure, fear, feelings of inadequacy, or alienation. When there is a high degree of autonomy, actions are taken based on an understanding and consciousness about their dynamics and mutability.

Around 55 percent of the students in this study presented heteronomous reasoning, which we considered noncompatible with students in higher education. To defend their answers, half of the students chose the life norm; 83 percent of these students were concerned with preservation of life and 17 percent with quality of life. Around 28 percent selected the law norm, and the remainder opted for both norms throughout the interview (Table 2).

The judgment criteria relate to the subjects' ethical motives that justify their answers. Hence, while values and norms imply mainly rules, judgment criteria define subjects' motives. The highest frequency found was of elements with utilitarian consequences ("b" in the list of elements). The second frequency was egoistic ("a"). Less found were idealistic consequences ("c"). No subjects subscribed to elements characterized by justice ("d") (Table 3).

These characteristics made it possible to categorize the individuals according to their stages of moral development. Based on Kohlberg's studies,<sup>25,26</sup> Díaz-Aguado and Medrano consider as hierarchically superior the moral stages in which actions justified by motivations such as punishment, egocentrism, or heteronomy are transcended.<sup>27</sup> While lower stages

are characterized by unilateralism and the inability to assume moral patterns, the more advanced stages adopt universality and a third person's perspective. The individual assumes that he or she is on his or her way toward an ideal society, defining criteria for the necessary changes, and more than simply working for the maintenance of an established system. Collectivity is emphasized, from the perspective of a rational, moral agent who may be concerned with such ideals as the rights of minorities. Someone who condemns Henrique for having stolen the medicine just because it is against the law, or thinks that he should not steal just because he could be arrested, can be socially adequate, but we cannot assume that his conduct necessarily represents, in an absolute form, a positive moral value. (See Table 4.)

Stage one, the lowest level of moral development, establishes that moral judgments do not need justifications and that the absolute application of norms or rules is sufficient for situations that must be dealt with. In this stage, one does not consider the circumstances surrounding a situation or any course of action outside the prescribed norms. The notion of punishment is clearly present, and actions are con-

**Table 1. Interviewees' predominant chosen values**

Value	n	%
Life/law	3	8.3
Predominantly law	3	8.3
Predominantly life	6	16.7
Law	11	30.6
Life	13	36.1
Total	36	100.0

**Table 2. Interviewees' chosen norms**

Norm	n	%
Life/law	8	22.2
Law	10	27.8
Life	18	50.0
Total	36	100.0

**Table 3. Interviewees' judgment criteria**

Judgment Criteria	n	%
A	10	27.8
B	21	58.3
C	5	13.9
D	-	-
Total	36	100.0

**Table 4. Interviewees' moral development levels**

Stage of Moral Development	n	%
1	4	11.1
2	17	47.2
3	11	30.6
4	3	8.3
5	1	2.8
Total	36	100.0

ditioned by fear. Another characteristic of this stage is the inability to evaluate justice in relationship to power and status. This leads to accepting the submission of the weak to the more powerful as correct, without necessarily criticizing or being willing to try to change such conditions.

The first stage is the lowest in Kohlberg's scale. A relatively high percentage of interviewees (11.1 percent) was found at this level. The largest number of interviewees (seventeen students, representing 47 percent of the sample) was found in stage two of moral development. In this stage, individuals discover conflicting interests and tend to utilize an individualistic and instrumental morality to regulate these interests. Unilateral solutions, based on obedience to external norms or rules viewed as absolutes, are usually not adequate to solve the complex problems lived on a daily basis by professionals in the health field. At stage two, the subjects tend to try instrumental individualistic solutions to solve the perceived conflicts of interests—for example, using influence and power as means of control. This kind of behavior has been typically pointed out as characteristic of children ages eight to ten,<sup>17</sup> but was found to be frequently present in the first-year dental students interviewed for this study.

Eleven students or 30 percent of the sample were found to be in stage three and showed a higher ability in articulating individual interests that considered other people's perspectives. In this stage, instrumental individualism is partially abandoned, allowing for the construction of a shared set of norms or moral expectations, as well as for the expectation of universal compliance. That is how individual interests are transcended and a basis of mutual trust is formed. In this stage, the individual strives for interpersonal relationships as a way of obtaining trust and social acceptance. The objective is to be good, and it is important to comply with other people's expectations.

Stage three starts to build up around twelve to thirteen years of age and characterizes most adoles-

cents' and adults' ways of reasoning.<sup>5</sup> This could be considered the minimum acceptable stage for a first-year dental student, with the expectation that the student would gradually move up to at least stage four. The latter, especially regarding the life/law dilemma, constitutes a rational basis for the dentist to adequately deal with situations he or she will face on a daily basis related to the social environment involving values and principles.

Stage four was reached, in our study, by three students, corresponding to 8.3 percent of the total sample. Such individuals, according to our theoretical frame of reference, value themselves as members of society. They integrate interpersonal expectations and share norms. In this stage, the person envisions society as a coherent system of codes and procedures impartially applied to all of its members. Individual interests are legitimate only if they serve to maintain social morality in its whole. The social structure, made up of relationships and institutions, has as its main role to mediate conflicts and promote welfare. There is a preoccupation with coherence and impartiality, and the individual's priority is the maintenance of the established social system, corroborated by its laws and institutions, and not in criticizing the structure and provisions of the system.

Biaggio<sup>21</sup> conducted an intercultural study and compared the level of moral development, according to Kohlberg's methods, among Brazilian and American university students. In that study, 25 percent of Brazilian and 13 percent of American students were categorized in stages five or six. There were statistically significant differences between the two countries only in the proportions of individuals in stage four: 55 percent of Americans and 26 percent of Brazilians. Self et al.<sup>28</sup> evaluated the influence of higher education in the moral development of veterinary medicine students at an American university and found that most individuals were in stages three and four, with some in stages five and six. There were no significant statistical differences between students at the beginning or end of the course. A similar result was described by Self et al.<sup>29</sup> in a study of medical students in the United States. Casterlé,<sup>30</sup> in studying nursing students, also used Kohlberg's methods but included the perspective of care, as well as justice, and found most individuals in stages four and five.

Bebeau and Thomas<sup>31</sup> evaluated the ethical training of freshmen and more advanced students in Minnesota. These authors concluded that the curriculum at the college level did not contribute signifi-

cantly to improve the students' moral development. More than 20 percent of the students presented a lower score, on average, when compared to high school students. Also, students at more advanced levels were not necessarily able to conduct a plausible argument on many daily issues related to medical practice.<sup>31</sup>

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## Conclusions

An unexpected and somewhat troubling outcome of this study was that 58 percent of the students sampled were found in a stage lower than 3. In our view, these students have not reached a minimum level of moral development that we consider necessary for admission to higher education institutions. This finding suggests a deficiency in the preparation of candidates selected to enter the university, perhaps as a result of a general deficiency of the educational system as a whole. The identification of such deficiencies in the phases prior to admission to the school of dentistry may help to redirect actions that could resolve inadequacies in the training of dentists in Brazil. In that training, one target point would be curriculum content dedicated to moral and ethical values and social responsibility.

In the current process of reconstruction of the National Health System, dentists will have a fundamental role to play since the system is making an effort to change its curative paradigm to a new paradigm that emphasizes health promotion and disease prevention. Public debate on the ethical and moral behaviors that permeate this issue is essential. Health promotion and disease prevention demand teamwork, societal perspective, and strong interpersonal skills. Personal and professional conflicts are prone to emerge in a context where the majority of professionals impose their ethical and moral reasoning upon individuals, while the system attempts to incorporate a basic interest in collective health.

One of the variables to be considered in analyzing such a complex situation is that the students at a very young age, most of them between sixteen and nineteen, experience pressure in choosing their profession. This may be one factor that leads these students and the educational system that serves them to neglect the ethical and moral aspects of their development, as they have to pass a very competitive examination to gain admission to the university. As a result, these students may be spending all their available time in matters that "really count": the logi-

cal disciplines that will constitute the significant points of the exam (i.e., mathematics, physics, biology, chemistry, and others). Philosophical matters, which are the basis for ethical and moral reasoning and for a humanistic nature, are thus neglected and may lead to a form of asynchronic development, with an emphasis in logical reasoning. This imbalance may not get any better at the university, as the dental curriculum also emphasizes technique over ethics, even though the current discourse points out as an objective the need to develop socially sensible professionals by emphasizing a humanistic and ethical approach.

A natural form of overcoming such problems would be the practice of the hidden curriculum,<sup>32</sup> i.e., the general context of relationships between and among students and professors, the rituals, forms of socialization, and general professional acculturation as promoted within the context of dental school training. Unfortunately, from our perspective, the university does not currently provide the climate to develop moral and ethical values and principles. The current value system of Brazilian society strongly subscribes to a global market system, with an emphasis on competition, profit, and individualism. The fast pace that this kind of lifestyle tends to promote favors heteronomy and egocentrism.

The findings of our study point to the necessity of further research on how students in the health field fare in terms of ethical and moral behavior. Such analyses and evaluations may hopefully improve the training and development of these future professionals regarding their contributions to society.

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