Principles of “Humanistic Environment” in Dental Education: Design, Validation, and Standardization of a Questionnaire

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Research article

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Abstract

Background

Health science education for students should comply with the principles of the Humanistic Environment. Adhering to these principles, along with other didactic and clinical training courses, will make treatment more successful and brings more satisfaction for patients.

Methods

Six completely related researches were found in the literature (Pubmed, Google Scholar). A questionnaire consisting of 67 questions was collected for evaluation. The questionnaire was submitted to 9 members of a panel of experts for a survey. Using statistical methods, Content Validity Index (CVI) and Content Validity Ratio (CVR) were determined and its reliability was evaluated. According to the relevant formula and Lawshe table questions with a score higher than 0.79 and 0.78 were included in the questionnaire, respectively. The questionnaire was also administered to 8 students for determining the Face Validity. Cronbach's Alpha was calculated 0.808, using SPSS (v.#22) software. The Reliability Analysis was determined based upon 15 students’ opinions.

Results

Eventually, a questionnaire containing 39 questions was finalized and categorized in 7 eminent humanistic fields. These are: Internal Feelings, Rules and Regulations, Interpersonal Relations, Behavior Change, Administration, Commitment & Satisfaction, Professional Ethics.

Conclusions

The principles of Humanistic Environment provide favorable interaction between students and teachers, satisfy the welfare of patient, and succeed the outcome of treatment along with regular scientific courses. Due to cultural and social differences, a specific questionnaire should be designed for each community to reflect their interests.

Background

The word *humanism* stems from the Latin root of “humanitas” meaning compassion for others. (1) In this regard, the *Humanistic Environment Index* has been introduced to health sciences with two dimensions: Mutual Trust and Mutual Respect. (2) *Mutual Trust* is a level of deep belief between patient and physician founding one of the main requirements of the Humanistic Environment. Increased *trust* provides the basis for increased effectiveness of treatment. A study by Keating et al. (3) noted that patients who trust their
physicians would show more successful treatment outcomes. In other words, patients cared and treated under humanistic attitude of a health care provider will present an effective therapeutic result. (4–7)

The other important component that plays a viable role in creating the Humanistic Environment is *Mutual Respect*. The importance of Respect is the connection between physician and patient that can certainly serve as a means of establishing a civilized relationship for alleviating patient’s complaint. (8)

In 1948, World Health Organization recognized “the inherent dignity” in its Universal Declaration of Human Rights. (9) The organization emphasizes that the rights of patients should be protected requiring educating policy makers and healthcare providers regarding the kind of treatment and respect they are owed, despite variations in local legislation. Plus, *Islam* as a divine religion pays a great deal of attention to the issue of dignity in its doctrines, especially when it comes to delivering quality of health services for patients. (10) In fact, decrees of Islam in the topic of *patients’ right* goes beyond the regularly recommended international guidelines. It further dedicates especial Worldly Reward as well as Hereafter Bonus to the visitors of a patient. (11)

According to the above principles, two aspects of *trust* and *respect* should be incorporated in the body of training program of students who are designated to provide health services. In a health educational system, students receive *clinical* skills training as they acquire *theoretical* knowledge. To achieve these two goals, it is necessary to focus on the different aspects of *humanistic principles* for provision of higher quality of health care service. Undoubtedly the establishment of the Humanistic Environment in educational settings initially launches with mutual respect between faculty members and students.

In recent years, many studies have investigated and evaluated the educational environment of academic dental settings. A research has shown that *stress* is one of the factors affecting the quality of education, acquisition of practical skills, satisfaction, and student success. (12) Today, based on the standards released by the Commission on Dental Accreditation (CODA), commitment to Humanistic Environment is one of the accreditation criteria for educational centers in the United States. (13)

There is much emphasis on the need to integrate the humanistic environment principles with dentistry education. There are some references to the theoretical and idealistic definitions - the review, explanation, and practical interpretation of humanistic environment- in dental schools. Yet, studies have shown that above attributes are not fully implemented to effectively promote oral health services. (14) Evidence has shown that an urgent need calls for revision of these guidelines which can directly motivate the students to advance the quality of delivering health care services, consequently. The quality of services boosts all regular educational trainings and fruits the better treatment outcome. (15)

A comprehensive study by Quick et al. (8) was conducted to examine the requirements for creating a Humanistic Environment in dental education settings. According to their study, dental education systems should strive to develop a professional communication for enhancing academic environments. Identification of these indicators and their implementation methods in the dental education setting
requires discussion, planning, and cooperation at the national level which tailored for each cultural context.

Stern (16) believes that professional performance has four essential components. These include *humanism, responsibility, altruism, and excellence*, so the content of a holistic curriculum should include all of these components. In health science programs, there is a deep and more important look at the interaction of the above components.

According to Haden et al., (17) dental education environment, in addition to being a scientific learning environment, which fruits in delivering health care services, is a space for learning professional interaction with public. Consequently, this environment should foster more inclusive performance (of students, residents, etc.) alongside scientific learning. In such environments, reinforcing the Humanistic attitude will provide a significant impact on flourishing the performance of students based on ethics, respect, patience, understanding, and professional relationships. Therefore, it is unlikely that if a student has completed his/her education under *stressful condition, discrimination, and humiliation*, contrary to the condition under principles of humanitarian standards shows an appropriate attitude, qualitative practice, or constructive communication with patients. (18) Obviously in such conditions, the result of treatments provided to patients will not be favorable.

At the end, there have been some studies on the role of *respect* and *trust* in dentistry educational environments. These studies are based on questionnaires designed for different geographical areas. They are performed in specific communities considering customs, cultures, and religious beliefs of a particular region. This research was intended to *design, standardize, and propose* a questionnaire based on the above criteria for the Iranian society with regard to its cultural and religious school of thoughts. The results of this study will provide for a tool policy makers and a guide for researchers for extensive and further investigations in this field, as well.

**Methods**

In this study, a questionnaire was designed to evaluate *respect* and *trust* in dental schools using relevant resources and articles. The Validity and Reliability tests were then assessed and the questionnaire was standardized. It was designed based on the following steps:

* First Step: collecting and drafting questionnaire items

At this stage, a comprehensive search was performed for collecting related articles published in either Farsi or English literature. After reviewing the questionnaires, the question items were categorized into *three groups*. These included: relevant and useful questions, duplicate questions (shared in multiple questionnaires), and unrelated questions. Thus, the unrelated and duplicate questions were excluded and the rest were retained.
Also, some other relevant questions were designed and added, based upon the cultural and social principles of the Iranian society. Finally, a set of 67 questions was compiled for experts’ evaluation, after inclusion of relevant queries. This was the basis for evaluation, editing, and categorization.

* Second Step: examining the content validity of the questionnaire

An introductory text was developed before questions’ list to orient all experts to the different aspects of the theme of study. Then, 7 experts in the field of community oral health, one expert in the field of health education, and one person in the field of behavioral sciences and sociology were asked to contribute their knowledge to the study. To assess Content Validity Ratio (CVR), they were requested to rate the necessity of each question according to their scientific skills and regarding to the following three criteria: **a. Essential, b. Useful but not Essential,** or **c. Unnecessary.**

Using Lawshe table (19) and the following formula, the questions that received the CVR score of *equal or higher than 0.78* were retained and the rest were removed.  

[Please see the supplementary files section to view the formula.]

In this formula, \( N_e \) is the number of experts who have identified a question as *Necessary,* and \( N \) is the total number of experts.

Furthermore, professionals were asked to determine the association between each question with the subject of study. This was the Content Validity Index (CVI) for measuring the *appropriateness* of each question. The ranking for the index was: **a. Not Related,** **b. Slightly Relevant,** **c. Relevant,** or **d. Completely Relevant.** Later, the number of experts who chose either *relevant or completely relevant* options for each question was divided by the total number of experts and expressed as a percentage. The questions that gained the CVI score of *equal or higher than 0.79* were saved and the rest were omitted.

The final list contained 39 questions were fitted in 7 humanistic environment fields. It should be added that the experts were inquired to suggest useful questions from their point of view if it was not addressed in the questionnaire. Yet, no additional topic/theme was proposed.

* Third Step: Face Validity

At this stage, the questionnaire was distributed among 17 members of the target group for valuation of the Face Validity. The criteria were the level of *Transparency* and *Relevance* of each question to the subject of the study. Besides the 9 members of panel of experts, 8 participating students who were at the 3rd stage (clinical) of their dentistry education were included. It is enlightening to mention that the dental education system in I. R. of Iran is structured in 3 sequential stages of: basic sciences, preclinical study (simulation lab), and clinical skills composing a 6-year dentistry program.

* Forth Step: Reliability Index
At this stage, the questionnaire was distributed among a new group of 15 members of contributing students, who were at the same stage of education, for assessment of its reliability. Then, the data were recorded in SPSS software (v. #22) for scoring the Kappa Coefficient statistical analysis of the questionnaire.

Results

The initial questionnaire contained a set of 67 questions in the field of humanistic environment, gathered from the literature. According to the expert's opinion, 28 questions were either unqualified or irrelevant to the present community with the specific cultural structure. The rest, the 39 selected questions were basically classified in 7 distinguished fields. *(Table 1)* These fields are: **I.** Internal Feelings, (negative: 6 questions, and positive: 3 questions) **II.** Rules and Regulations, (2 questions) **III.** Interpersonal Relations, (9 questions) **IV.** Behavior Change, (4 questions) **V.** Administration, (3 questions) **VI.** Commitment & Satisfaction, (3 questions) and **VII.** Professional Ethics (Patients’ Rights: 6 questions, and Patients’ Privacy: 3 questions).

To analyze Reliability Index of the questionnaire, the Kappa Coefficient index was used employing the test-retest method with the SPSS (v. #22) software. The lowest and highest score for questions were 0.336 and 1.000, respectively. *(Table 2: a & b)* Furthermore, the calculation for average score was 0.6707.

Discussion

Although the health sciences education is mainly focused on clinical competencies, the Humanistic Environment should not be neglected. *(13, 15, 20–25)* Unfortunately, this issue has neither been integrated in the academic curriculum nor been fully addressed in the literature. Some researchers have studied only on the Trust issue in non-educational settings. *(26)* No study has investigated the subject of Respect in academic atmospheres.

It is obvious that there cannot be a standard questionnaire applicable to all societies. As mentioned in the previous sections, in order to evaluate the Humanistic Environment in different societies, it is necessary to harmonize the content of the questionnaire with the culture, social conditions, and beliefs of any society. This research has attempted to provide a suitable tool for evaluating the educational environment of the dental schools of Iran, or for other countries with similar values.

The questionnaires used in the present research were stemmed from two groups of domestic and international publications. These are explained as below:

**A) Examination of international questionnaires**

In the process of designing the questionnaire, a comprehensive search of the available international sources and references (Google Scholar and PubMed) was carried out. One of the most comprehensive and related articles was conducted by Quick et al. *(18)* Many other studies were focused on the non-
educational communities. (26) Also, some questions were designed by extracting from the American Dental Association Principles of Ethics and Code of Professional Conduct protocol. (27) Similar approach was used for designing questions from the American Medical Association Code of Ethics recommendations. (28)

After examining the content of all questionnaires, the initial selection of the questions was based upon the appropriateness and relatedness of their scope to this study. Obviously, some of the unrelated and incompatible questions with the culture of the present community were eliminated in the first place. For example, given that American society has a very diverse racial composition; questions related to this issue were incompatible with our country's social system.

B) Examination of domestic questionnaires

Related studies to this research have also been carried out domestically. Obviously, the questions raised in these questionnaires were affirmed by most experts, later on. Fortunately, there were some studies performed in the different domestic educational fields. (29) In fact, there is a bylaw released by Ministry of Health for educators of all health related institutes and for all health care professionals to exercise, after graduation. (30)

The interesting point in the questionnaires was related to some common concerns in the domestic as well as international student populations. These viewpoints reflect the similar problems in all student communities regardless of their geographic location, culture, beliefs, or even social behavior. The unkind way that teachers interact with students is a clear example that can be mentioned. Another pattern is discrimination in the clinical assignments and in evaluation of their performance. Among the questions that were generally rejected by scholars and experts were the consumption of alcoholic beverages and increased coffee drinks. The questions regarding taking prescribed and non-prescribed medications were repeated in different forms in the questionnaire by Quick et al (2).

In the standardization process, the questions in the Law and Regulations section received the lowest score. This indicates that despite numerous educational regulations, some issues have not yet been efficiently addressed in the legislation. The only question that received most concern by experts, in this section, was exclusively related to cheating while studying.

On the other hand, questions about patients' participation in treatment and clinical services scored the highest in the Professional Ethics section. No questions in this field were disagreed by the panel of experts. Therefore, it seems that one of the most important humanistic behaviors is to justify patients with a proposed treatment plan to obtain their satisfaction.

In this study, Face Validity was evaluated with the help of 17 individuals from the target population. Fortunately, there was no misconception in any question and the content was approved by the experts. There was fully consensus on all related items.
Conclusions

First, this study strongly emphasizes that principle of Humanistic Environment should be integrated in all clinically-based health educational fields. Second, it also remarks that execution of this concept establishes the more kindly interaction between students and faculty members. Third, linking professionalism to humanism assures the quality of treatment and satisfaction of health care recipients, as well. Forth, this investigation confirms that Humanistic Environment approach in a health care setting requires tailoring an appropriate standard fitted to social values of an individual community.

Declarations

* This article is originated from a thesis registered under #3618/1398 at the office of Academic Affairs of Shahid Beheshti University of Medical Sciences, School of Dentistry.

1. Ethics approval and consent to participate: The corresponding author confirms that all experiments/procedures were performed in accordance with the guidelines and permission of the Ethics Committee for Biomedical Research (c/o Research Committee of the office of Vice President for Research Affairs of Shahid Beheshti University of Medical Sciences under the Permission code of: IR.SBMU.RIDS.REC.1396.588 (Feb 13, 2017).

The Ethic committee of university reviews all procedures including: clarity of the title, justification for study performance, number of participants, sampling method, statistical method, estimated time duration of the study, method of data gathering, efficiency of the verbal/written consent form, etc. Accordingly, the ethical code is issued for the research subject. The Research Committee of school issues final approval for thesis-based studies. The office for Academic Affairs grants a registration number reporting to the office of Academic Affairs of university as of the higher official level.

The questionnaire contained an explanatory sheet prior to table of the questions. It clearly explained that the data will be collected anonymously and the participation was NOT obligatory. However, the plan of study was also verbally explanation of the procedures and objectives of the study for volunteer participants.

2. Consent to publish: Not Applicable (The data is gathered anonymously)

3. Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

4. Competing Interests: The authors declare that they have NO competing interests in this study.

5. Funding: The authors state that there is no funding for this study or for publication of the article.

6. Authors' Contributions: NM executed all technical procedures in collaboration with the other research team member and did the literature review of article. MS assisted the corresponding author and helped NM during the study. AHZ designed the study and monitored all steps of the study and prepared the manuscript.
All authors have read and approved the final manuscript. They are also fully informed of the progress of manuscript evaluation.

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8. **Authors' Information:** Not Applicable.

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**Tables**
| Categories                  | # | Questions                                                                 | CVR  | CVI  |
|-----------------------------|---|---------------------------------------------------------------------------|------|------|
| I. Internal Feelings        |   | **Negative**                                                             |      |      |
|                             | 1 | Given the sensitivity of clinical services, have you ever observed a student with clinical inadequacy despite having educational qualifications? | 0.78 | 0.88 |
|                             | 2 | Have you ever seen a student at the school working under fatigue?         | 0.88 | 0.79 |
|                             | 3 | Have you ever seen a student working under other difficult psychological conditions (such as family, social problems, etc.)? | 1.00 | 0.79 |
|                             | 4 | I have difficulty for concentrating.                                      | 0.85 | 0.79 |
|                             | 5 | I regularly feel restless.                                                | 0.84 | 0.83 |
|                             | 6 | I have lacked self-confidence.                                            | 0.87 | 0.85 |
|                             |   | **positive**                                                              |      |      |
|                             | 7 | I usually feel happy.                                                     | 0.78 | 0.80 |
|                             | 8 | I am optimistic and hope for the future.                                  | 0.84 | 0.83 |
|                             | 9 | I am satisfied with my efforts.                                            | 0.87 | 0.83 |
| II. Rules and Regulations   |   | **Negative**                                                             |      |      |
|                             | 10| Do you know a student who has cheated in the school?                      | 0.78 | 0.83 |
|                             | 11| Is there a place for encouragement in the administrative structure of the college to evaluate students’ scientific and practical performance? | 0.78 | 0.79 |
| III.                        | 12| Have you ever                                                            | 0.88 | 0.79 |
| Interpersonal Relations |  |  |
|-------------------------|----------------|----------------|
| 13                      | Have you ever suffered from gender discrimination by other *students* at the school? (e.g.: missing opportunities, imposing harder and more work, or being denied clinical duties) | 0.88 | 0.88 |
| 14                      | Have you ever suffered from gender discrimination by other *residents* at the school? (e.g.: missing opportunities, imposing harder and more work, or being denied clinical duties) | 0.88 | 0.88 |
| 15                      | Have you ever suffered from gender discrimination by a *faculty member* at the school? (e.g.: missing opportunities, imposing harder and more work, or being denied clinical duties) | 0.88 | 0.88 |
| 16                      | Have you ever suffered from gender discrimination by *schools' staffs* at the school? (e.g.: missing opportunities, imposing harder and more work, or being denied clinical duties) | 0.88 | 0.88 |
| #   | Question                                                                                                                                  | Value1 | Value2 |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|
| 17  | If yes, have you ever talked to anyone about such cases of gender discrimination?                                                          | 0.78   | 0.88   |
| 18  | Are there any intimate and productive relationships between faculty members and students?                                                | 0.87   | 0.80   |
| 19  | Do faculty members act fairly in student evaluation?                                                                                    | 0.82   | 0.87   |
| 20  | Do you feel responsible for interacting appropriately with departments’ staff (secretary, sterile room staffs, etc.)?                     | 0.87   | 0.86   |
| 21  | During the school, have you ever taken OTC medication (without a physician prescription) to stay awake at nights?                         | 0.88   | 0.79   |
| 22  | During the school, have you ever taken any prescribed medications to stay awake at night?                                                | 0.88   | 0.79   |
| 23  | Have you ever needed a consultation with a psychologist to control stress?                                                                | 0.94   | 0.88   |
| 24  | Have you ever been hospitalized due to stress and psychological pressure?                                                                  | 0.78   | 0.88   |
| 25  | Does the school                                                                                                                                 | 1      | 0.79   |
| Administration                                                                 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|--------------------------------------------------------------------------------|----|----|----|----|----|----|----|
| treat students fairly/appropriately for their possible mistakes?               |    |    |    |    |    |    |    |
| Does the school consider the demands and conditions of students in decision   |    |    |    |    |    |    |    |
| makings (as far as laws and regulations allow)?                                | 0.78 |    |    |    |    |    |    |
| I am confident in management capabilities of the schools’ administration.     | 0.79 |    |    |    |    |    |    |
| (dean, chair, deputies, etc.)                                                 | 0.79 |    |    |    |    |    |    |
| I have a passion for my school and feel very much attached to it.              | 0.78 |    |    |    |    |    |    |
| I believe the schools’ administration strives to solve students’ problems     | 0.88 |    |    |    |    |    |    |
| (academic, mental, financial, and housing, etc.)                              | 0.79 |    |    |    |    |    |    |
| Are students interested in participating in clinical service improvement      | 0.78 |    |    |    |    |    |    |
| courses and programs?                                                         | 0.88 |    |    |    |    |    |    |

| VI. Commitment & Satisfaction                                                 |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------------|----|----|----|----|----|----|----|
| I am confident in management capabilities of the schools’ administration.     |    |    |    |    |    |    |    |
| (dean, chair, deputies, etc.)                                                 |    |    |    |    |    |    |    |
| I have a passion for my school and feel very much attached to it.              |    |    |    |    |    |    |    |
| I believe the schools’ administration strives to solve students’ problems     |    |    |    |    |    |    |    |
| (academic, mental, financial, and housing, etc.)                              |    |    |    |    |    |    |    |
| Are students interested in participating in clinical service improvement      |    |    |    |    |    |    |    |
| courses and programs?                                                         |    |    |    |    |    |    |    |

| VII. Professional Ethics                                                      |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------------|----|----|----|----|----|----|----|
| Patients’ Rights                                                              |    |    |    |    |    |    |    |
| Do you keep patients informed about different treatment options for making   |    |    |    |    |    |    |    |
| his/her own decision?                                                         |    |    |    |    |    |    |    |
| Do you give patients the right to inquire about their treatment procedures   |    |    |    |    |    |    |    |
| for                                                                           |    |    |    |    |    |    |    |

|   | Question                                                                 | CVI  | CVR  |
|---|--------------------------------------------------------------------------|------|------|
| 33 | Do you feel responsible for interacting properly with the patient's family and accompanying persons? | 0.87 | 0.85 |
| 34 | Do you provide high quality treatment to patients regardless of their social status? | 0.87 | 0.88 |
| 35 | Do you provide high quality treatment to patients regardless of their financial condition? | 0.85 | 0.90 |
| 36 | Do you respect patients' rights in choosing non-emergency care providers? (for personal, social, and religious reasons) | 0.88 | 0.79 |
| 37 | Do you care about keeping patients' health status secrets? | 0.83 | 0.88 |
| 38 | Do you respect patients’ privacy when examining and treating patients (type of illness, social issues, family issues, etc.)? | 1.00 | 1.00 |
| 39 | Do you respect the patients’ religious and cultural beliefs? | 0.78 | 0.79 |

**Table 1.** The Humanistic Environment questionnaire contains: a numbers of 39 questions fitted in a set of 7 humanitarian categories. The selected question scored at least the CVI value of 0.79 and CVR rate of 0.78.
### a. Symmetric Measures (lowest)

| Measure of Agreement | Value  | Asymp. Std. Error\(^a\) | Approx. T\(^b\) | Approx. Sig. |
|----------------------|--------|-------------------------|-----------------|--------------|
| Kappa                | 0.336  | 0.241                   | 1.314           | 0.189        |
| N of Valid Cases     | 15     |                         |                 |              |

### b. Symmetric Measures (highest)

| Measure of Agreement | Value  | Asymp. Std. Error\(^a\) | Approx. T\(^b\) | Approx. Sig. |
|----------------------|--------|-------------------------|-----------------|--------------|
| Kappa                | 1.000  | 0.000                   | 3.873           | 0.000        |
| N of Valid Cases     | 15     |                         |                 |              |

**Table 2.** The Kappa Coefficient index was used according to the test-retest process, based upon the SPSS analysis. *a.* shows a question with the lowest agreement coefficients of score; and *b.* indicates the highest agreement coefficients score of a question.

**Supplementary Files**

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- **Formula.docx**