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ORIGINAL ARTICLE

Knowledge, attitudes and practice of last-year dental students in Rio de Janeiro city on HIV/AIDS

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Abstract:

HIV pandemic remains a serious public health issue in the world; Brazil stands out as one of the countries with the highest rates of infected people. The continuous advancement in the understanding of HIV infection, and its forms of transmission and treatment, hasnt necessarily been accompanied by a change in the behavior of the general population, especially of health agents. These, in the performance of their professions, need to be conscious of the deep impact that the condition still holds throughout all of the graduation courses and clinical studies. Therefore, they should ally knowledge about the disease and the mastery of safety practices to attitudes that respect their patients. The present study aims to analyze the behavior of students of the last year Dental students of two Universities from Rio de Janeiro regarding the care of people living with HIV/AIDS, reinforcing the importance of the inclusion of the dental practitioner in the multidisciplinary team of the study and treatment of the disease. Although 58.3% of the students declared contact with HIV/AIDS patients, only 13.4% had previous training in the care of these patients. It is urgently necessary to add a specific didactic module on HIV/AIDS in the school curriculum.

Keywords: HIV infections; Education; Dental. Health Knowledge; Attitudes, Practice

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INTRODUCTION

Human Immunodeficiency Virus type 1 (HIV-1) is the etiologic agent of the Acquired Immunodeficiency Syndrome (AIDS), a retrovirus from the lentiviridae family which presents a long-term incubation period, infecting blood cells from the nervous system and suppression of the immune system. The infection with HIV-1 presents progression with a wide range since the acute infection stage until the developed stage of the disease, being Aids the clinical manifestation that culminates in progressive immunosuppression[1]. HIV-1 can be transmitted through sexual activities (vaginal fluid and sperm), parental exposition (blood and derivatives or sharing needles) and mother-to-child transmission (during pregnancy, delivery or breastfeeding), resulting in a chronic infection that spreads in human species.

Due to its tropism by the CD4 T Lymphocytes, macrophages and dendritic cells, the HIV-1 creates a depletion in the immune system, which is the most important characteristic of the illness. During the acute infection stage, which may last weeks, it occurs an initial decrease in LTCD4 levels and viral load (VL) increase. The levels of LTCD4 soon after establish themselves and then, revert to decrease gradually through the years[2]. Aids epidemic is marked by a continuous transformation that has been reaching new areas and different population segments.

The population from Africa, as the continent is the birthplace of the disease, is until today the most affected. Since the beginning of the epidemic (1980), over 70 million people were infected by HIV and close to 35 million died as a result from the infection. Around 36.7 million people all over the world lived with the Human Immunodeficiency Virus (HIV) by the end of 2015[3]. The infection by HIV/AIDS poses a serious public health issue in the world. In Latin America, the largest numbers of cases are found in Mexico (12,000 new yearly infections), Venezuela (6,500 new yearly infections), Colombia (5,600 new yearly infections), Argentina (5,500 new yearly infections), and Brazil. In Brazil, 798,366 cases were registered until June in 2015, with an annual average of 40,600 reported occurrences in the latest records, a quantitative data that represents almost half of the total cases in Latin America (1.6 million) and nearly 2% of the number of infected people in the world.

Despite all development in understanding the HIV infection, its ways of transmission and treatments, the prejudice is still very present in the life of HIV-positive patients. The combat against the stigma is almost one of the cornerstones regards Aids approaches, by both medical experts and social aspects of inclusion and sociability of those affected by the virus in everyday situations[4]. Many efforts are endeavored to explain their real aspects and then, make it a target of less queries. It's worth analyzing the behavior and attitudes from health experts - in this study, specifically last year Dental students - in situations of assistance to HIV-positive patients and mainly, investigate if there is and which are the reluctance origins in this type of care[5].

This research seeks to evaluate the level of knowledge, practices and attitudes of the last-year Dental students and if there is any hesitation on providing care of HIV-positive patients by Dental professionals that are supposed to assist and support the ailing.

MATERIAL AND METHODS

The choice of participants was based on evaluation criteria of sociability, including students which institutions showed interest in participating - Dentistry School of the State University of Rio de Janeiro (UERJ) and Dentistry school of the São José University (FSJ) - in a quantitative of 60 individuals (30 from each education institution). The present study is a cross-sectional quantitative analysis. A bibliographic research took place in order to find validation studies of surveys which approached the same topic as this work.

First of all, it was applied an initial survey with theoretical questions taken from specialized literature and observation in classrooms that allowed an overview of patients through a sociodemographic and professional point of view. This tool was submitted to a prior test to evaluate the need of adaptation of the content in the questionnaire, as much like the adequation of the response options.

Four experts - two doctors and two dentists, with professional living in HIV/AIDS health care were submitted to this analysis process where only the sentences and answers of the questionnaire were valid, but with additional fields of responses such as "Fully disagree", "Fully agree", "Uncertain", "Disagree" and "Agree". After the modifications and adaptations made based on these considerations, a second research tool was elaborated.

To verify its clarity, the second version of the survey was applied in Pretest two to ten last-year dental students, whom have been asked to state about the clarity and possible difficulties in giving any of the answers, classifying at the end the questions set in "I didn't understand at all", "I understood some parts", "I

understood it partially" "I understood but still have some questions" or "I understood it completely". When it was noticed the need for semantic alterations of the items, a Portuguese language teacher modified them without changing the meaning.

A set of tools destined to acquire information about the variables in the analysis of this study was applied in all students; with the goal to evaluate the knowledge, attitudes and practices of the expected service to infected patients. This tool was developed for the present academic work, including theoretical questions taken from specialized literature and observing experiences in classrooms that allowed an overview of patients through a sociodemographic and professional point of view.

The questionnaires evaluated the level of both technical and social expertise practices regarding HIV, its ways of transmission, treatments and life with the virus. Beyond that matter, it also intended to simulate the attitudes in this type of dental service, with the goal to appoint any reluctance and possible ways to combat against it.

The application of techniques of Descriptive Statistics aimed at characterizes the sample universe researched.

For the description of the collected data were used location and dispersion measurements according to the symmetrical pattern of distribution of data frequency.

Amongst the first, the researchers calculated the mean and median, which are paths for measuring the central tendency. The dispersion measurements have estimated the variability of the data. For that purpose, the researcher estimated the standard error, coefficient of variation and standard deviation.

Data have been typed in a database and analyzed using the software Microsoft Excel 2016. The variables were described in tables of absolute and relative frequencies. Associations between the variables have been analyzed through the *Student-T Test* and the *Wilcoxon-Mann-Whitney Test*, according to the normal range of the dataset.

The statistical program *Software-R* has been applied, and in order to maintain the scientific character of the research, this study has taken the level of significance of $p<0.05$ which is the 95% chance of being correct the affirmatives and/or negatives denoted during such investigations, taking a 5% chance for unexpected results.

The survey is divided into three subsections: 11 questions referring to knowledge (questions 1-11), some of them with sub-items; 11 questions regarding attitudes (question 12-22); 2 questions of professional practice regarding infection monitoring (questions 23 and 24, with a total of 17 sub-items), being applied options of "agreement", "disagreement" and "uncertainty". The following evaluation criteria were applied: at least 75% of the responses are classified as "excellent", between 74%-50% as "good", between 49%-25% as "average" and lower than 25% as "adverse". The maximum score was established as 100 points (100%) for each of the subsections. The criteria of inclusion and exclusion were the following:

Criteria of inclusion:

Last-year dental students of both genders who accepted to be a part of the research and were over 18 years-old;

Criteria of exclusion:

Students that weren't through last year of dental under-graduation, who didn't want to be part of the research and didn't sign the informed consent form.

RESULTS

A total of 60 questionnaires were answered, 30 by students of State University of Rio de Janeiro Dental School (Group A) and 30 by Dental students of São José University (Group B), both in the last year of Dental Graduation. The medium age of Group A was 23 years old (DP 2.29 years), minimum age of 21 and maximum age of 39 years old. Most (83.3%, 25/30 students) of the respondents from Group A were at the age group of 20-24 years old, while in Group B, 40%(12/30 students) of the respondents represented this very age group. The age group from 25 to 29 years old encompassed 10% (3/30 students) in Group A and 23.3% (7/30 students) in Group B, while the range of 30 to 34 years old it was 16.67% (5/30 students) in Group B and only 3.33% of the respondents from Group A. Exclusively in Group B there were students (20%) in the range of 35 to 39 years old. The greater share of respondents of the research were females in both universities analyzed, with an 80% score (24 students) in Group A and 66.67% (20 students) in Group B, representing 73.3% of the students who answered the survey.

There was no statistically significant difference between the ratio of men and women participating in both universities ($p=0.2429$). The respondents answered all questions in both analyzed Universities.

There were statistically significant differences between ages from women within the respondents of the research between both Universities, p-value 0.0179, with an average of 23.79 for Group A and 28.15 for Group B.

When questioned about previous practices oriented to HIV-positive patients care, 90% (27/30 students) of the students in Group A declared to not have had previous contact with these particular knowledge during their under-graduation, which is coming to an end since they are last-year Dental students.

In Group B, it was observed an equally high percentage, around 83.3% (21/30 students) of students also affirmed that didn't took previous practices in support to HIV/AIDS public.

Related to question 9, which brings up the evaluation of the student if his professional development provides the proper knowledge to care for HIV/AIDS patients, 63.3% (19/30 students) from Group A evaluated their formation as positive and 66.7% (20/30 students) from Group B had the same evaluation.

The first research aim was to evaluate the general knowledge on HIV/AIDS in the parameters of the Dentistry clinic specific for last-year Dental students of both Universities, one public and the other private. There were 11 questions about specific knowledge on HIV/AIDS. On the item regarding the increase in the chances of developing infections, including oral, in HIV-positive patients, 96.7% (29/30 students) from Group B and 63.3% (19/30 students) from Group A identified the correlation risk. About the possibility of the dentist contracting HIV/AIDS during an attendance of HIV-positive patients through blood splashes to the eye, 66.7% (20/30 students) from Group B and 36.7% (11/30 students) from Group A identified the relation.

In the question about post-exposure prophylaxis in situations of biological accidents, 73.3% (22/30 students) from Group A and 60% from Group B (18/30 students) agreed about the maximum period of 72 hours for initiating the treatment. The drops of coughing and/or sneezes as routes of transmission of the virus were identified by only 6.7% (2/30 students) of the respondents from Group A and B.

The statement that HIV-positive patients can have a normal life with therapeutic monitoring (question 8) was supported by 96.7% (29/30 students) of students from Group A and 90% (27/30 students) of respondents from Group B. In relation to considering all of potentially infected patients, 86.7% (26/30 students) of students from Group A and the same percentage from Group B agreed with the statement.

The question 11 from the survey referring to possible routes of exposure was composed by seven subitems and students were supposed to check the "high-risk groups" which they believed are more exposed to HIV. Only 10% (3/30 students) of students from Group A checked the item "blood donors" as a high-risk group and 23.3% (7/30 students) from Group B presented the same answer, and the item was considered wrong for the score on level of knowledge in the present study. As the item high-risk group "malnourished children" was checked as right by 3.3% (1/30 students) of respondents from Group A and by none from Group B, an item also considered wrong for the score in the survey. The Group A scored an average of 58.14 points and Group B 57.74 points, both considered by the scale of evaluation as a good concept, having no statistically significant difference between the scores from both universities (p-value 0.8789).

The second aspect of the present work was to analyze the attitudes of future professionals related to the treatment of HIV-positive patients. There were 11 questions regarding attitudes in the survey, five statements pointing positive attitudes and five negatives, with the option of "yes" in agreement with the statement of the question, "no" in disagreement and "don't know" for the respondents who chose not to express an opinion regarding the statement.

The average score reached in the subsection of the survey referring to the attitudes of respondents from Group A were 73.04 and from Group B were 72.74. Therefore, the public university such as the private evaluated presented the concept of "excellent" referring to the subsection of practices of the research tool.

There was no statistically significant difference between the evaluated universities in relation to the attitudes regarding HIV/AIDS patients in both universities (p-value 0.9213) and between women from both universities (p-value 0.7420). The third and last aspect of the present work approached questions oriented to the practices adopted by the respondents of the research, from the descriptions "never", "always", "sometimes" and "unknown". One of the questions from the survey addressed the contact of respondents during the formation of HIV/Aids patients; all other questions, but the one referring to protection barriers, had as answer key "always".

Both of the evaluated Groups scored "excellent" according to the classifying scale adopted in the present work, with an average score of 75.21 to the Group A and 80.83 to the Group B.

There was no statistically significant difference between the evaluated Universities in relation to the

practices (p-value 0.199) and between women from both universities (p-value 0.299), that according to the respondents are adopted in the attendance of HIV/AIDS infected patients. A total of 50% (15/30 students) from Group A and 63.3% (20/30 students) of respondents from Group B declared contact with HIV/AIDS patients during their graduation and professional training, although the level of knowledge about HIV/AIDS of both evaluated universities in the present study were in a range of 55% to 59%.

DISCUSSION

Over 60% of the evaluated students were in the age of 20 to 24 years-old and had a better performance on the results. This fact can be associated to the easier access to the means of communication and students of the higher age group, in the questions related to attitudes, it was shown greater prejudice, which can happen due to moral questions deeply implanted in society.

The high number of students that didn't had a previous training in attendance to HIV/AIDS patients is alarming and invites us to try to change this reality.

Oral injuries were reported since the beginning of the AIDS epidemic. The numbers of patients infected by HIV are still on the rise. Oral diseases in HIV-positive patients are most of times more difficult to diagnose, because clinical presentations can vary from the same diseases in HIV-negative patients. The oral injuries associated to HIV presents diagnosis, prognosis and therapeutic impact. Around 10% of the population infected by HIV will present oral manifestations as a first trace of the disease. In patients infected by HIV, oral hairy leukoplakia and oral candidiasis are useful markers to the progression of the illness[6]. Oral injuries associated to HIV have a negative impact on quality of life of people living with HIV/AIDS, bringing difficulties to feeding[7].

Oral injuries associated to HIV INFECTION are a huge assistance to detect the severity and progression of the infection by HIV in patients, however only these percentages: Oral Candidiasis (Group A-83.3% and Group B-70%), oral hairy leukoplakia (Group A-46.7% and Group B-33.3%), necrotizing ulcerative gingivitis (Group A-80.0% and group B-66.7%), aggressive periodontitis (Group A-63.3% and Group B-23.3%), were identified with HIV infection[8].

Between the not associated injuries, it's important to point out that common injuries in dental clinics such as oral mucocele[9] (were well recognized as not associated in a group, and strongly associated in another group (Group A-3.3% and Group B-70%) and the geographic tongue was well recognized as a non-associated in both groups, including the same percentage (Group A-3.3% and Group B-3.3%). Almost all students from Group A (96.7%) and slightly more than half of the students from Group B (63.3%) recognize that HIV increases the chances of developing other infections, also including oral infections[10], the chances of developing oral infections in PLWHA are high.

Although the protective goggles in dental care are an advocate practice in all subjects in Dental college, only 36.7% of students from Group A and 66.7% of students from Group B pointed out that dentists may contract HIV through splashes on their eyes. Although xerostomy is a symptom of HIV/AIDS patients[11], 55% of the respondents know that it's not an exclusivity of the illness. Almost all of the respondents know the perfect timing to go on post-exposure prophylaxis. Around 96.7% from Group A and Group B consider that the patients under Antiretroviral Therapy (ARV) can live a common life. Although 86.7% of students related to not had a specific training, they consider themselves able to attend people living with HIV. Most of both groups know that all patients should be considered potentially infected (86.7%).

Despite both groups have a knowledge scored as "Good". the percentage of previous practice points out to a gap in grade curriculum both in the private and public universities, what leads us to a need of updating and inclusion of a disciplinary module regarding the study of HIV/AIDS infection, which affects 36.7 millions of people in the world, being the yearly average of 40.6 thousand occurrences in the previous registers from Brazil[3].

In item referring to the self-evaluation of academic and professional background, 63.3% of Group A and 66.7% of Group B evaluated as positive this process. On the matter of knowledge about the routes of exposure, most part knows that blood donors and malnourished children aren't a part of high-exposure groups, but it is important to point that a 3.3% identified malnourished children as a risk group. The three most exposed groups have been recognized properly, such as sex professionals (Group A 90%, Group B 93.30%), men who have sex with men (Group A 26.70%, Group B 60%), and people with multiple sexual partners (Group A 90% and Group B 100%). Despite the fact that actual numbers of health experts infected by work accidents are low[12], it's important that students take this into account, because doing so, they will be more careful regarding the bio-security

standards. In relation to blood donors, 10% of Group A made this association and 23.3% of Group B identified blood donors as a high-risk group.

CONCLUSIONS

Setting off this present study, it has been identified that the level of knowledge was considered "Good" in both groups of evaluated universities. The respondents from UERJ scored an average of 58.14 points and FSJ's 57.74.

In the analysis of attitudes, it was identified that both groups scored "Excellent": students from UERJ reached the average of 73.04% and the ones from FSJ 72.74%, even though other works presented different results; in the present work no reluctance was found in the health care of PLWHA, perhaps due to the nature of being an analysis of an academic group. If this very analysis was submitted to experts already mature in the job market, the results could have been different.

Referring to the embraced practices, the group from Group A presented 75.21% and the group from Group B 80.83%, what's been considered "Excellent". Although 50.0% of students from UERJ and 63.3% students from FSJ have had contact with attendance for HIV-positive patients, the groups didn't show expertise of knowledges, bearing the score of 53.6 (UERJ) and 48.4 (FSJ) out of 100 points.

Despite the fact that the groups had a great score, there is an urgent need of increasing a module specified about HIV/AIDS infection in the learning programme.

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