Knowledge, Attitude and Practice of Dental Students Regarding Treatment of Patients with HIV or AIDS in Nepal

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ABSTRACT

Background

There have been discrepancies in providing treatment to HIV positive patients across healthcare fields, due to lack of knowledge. Currently, there is an increasing awareness of discrepancies in the provision of dental care for HIV positive patients and a potential relationship to health care professional knowledge and attitudes towards these individuals.

Objective

To analyze dental students' knowledge, attitudes and practices regarding treatment of HIV patients in Nepal.

Method

An online survey was sent to all dental students via blue-eval. Mixed effects logistic regression was used to predict a likelihood of the dental treatments between HIV negative and HIV Positive patients. Logistic regression was used to predict the likelihood of dental treatments for HIV patients based on the knowledge of human immunodeficiency virus.

Result

Two hundred six students (65%) responded to the survey from dental colleges in Nepal. All students had worked with at least one HIV positive patient. Overall, students felt uncomfortable providing dental treatments to HIV positive patients, with only 29% likely to perform a prophylaxis and filling, 18% orthodontic treatment, 16% endodontic treatment, 12% periodontal scaling, and only 10% extractions.

Conclusion

Currently dental students in Nepal are uncomfortable in providing treatment to HIV/AIDS patients.

KEY WORDS

Dental student, Health knowledge-attitude-practice, HIV patients, Immunocompromised

INTRODUCTION

The first human immunodeficiency virus (HIV) patient was reported in Nepal in 1988. As of July 2015, only 26,702 individuals (16,701 males, 9,942 females and 59 third genders) tested positive for HIV.[1] It is estimated that at least almost 40,000 are living with HIV in Nepal.[2] This discrepancy implies that at least one-third of those living with HIV are yet to identified.[1] An increase in the use of Highly Active Antiretroviral Therapy (HAART) has drastically improved life expectancy for infected individuals. With this increased life expectancy, there is a need for improvement in recommended healthcare standards. Research into specific treatments for HIV positive (HIV+) individuals, has also led to new recommendations to improve care for them.[3]

Historically, there have been discrepancies in providing treatment to HIV+ patients across healthcare fields. This has been shown to be caused by lack of knowledge of the healthcare provider about HIV, and blatant discrimination of HIV+ individuals.[4,5] One way to improve care for HIV+ patients is through improved education of healthcare professionals and by addressing negative attitudes of professionals.

Currently, there is an increasing awareness of discrepancies in the provision of dental care for HIV+ patients and a potential relationship to health care professional knowledge and attitudes towards these individuals.[6-7] HIV status is not a contraindication for dental treatment, with few issues arising with use of appropriate care.[8-9] Knowing this information may highlight deficiencies in education and clinical practice related to the provision of dental care in dental colleges of Nepal.

METHODS

The study was conducted to assess knowledge, attitudes, and practices of practicing dental students towards treatment of patients with HIV or AIDS, at 2 dental colleges in Nepal. This research study aimed to determine the difference in knowledge, attitude and clinical application of dental students in Nepal regarding the provision of dental to HIV+ patients and, if present, is this a result of lack of knowledge about HIV or discrimination towards HIV positive individuals. The study aimed to answer three hypotheses. 1) Is there a discrepancy between how dental students treat HIV-positive and HIV-negative patients? 2) Is there is a relationship between the dental student's knowledge of HIV and a likelihood of dental care? and 3) Is there a relationship between dental student attitudes toward HIV positive individuals and the frequency of dental treatment for these patients?

Participants were recruited and responses to the survey recorded anonymously via Blue Course Evaluation software. Blue Course Evaluation (Blue eval) is a software used in University of Louisville, to optimize and improve the student learning experience. It is easier to use and completely anonymous. It was designed such that it took approximately 10-15 minutes to complete. This study was independently reviewed and approved by the university's Institutional Review Board of the University of Louisville and permission from both the dental colleges were obtained In accordance with the Helsinki Declaration and the Belmont Principles, respondents implicitly gave their written informed consent if they proceeded to take the survey after reading a preface outlining the description of the survey. The study was conducted for a period of 6 months.

Questions on the survey were constructed based on previous surveys and modified to address the current research questions.[10,11] The survey consisted of four sections. In the first section, demographic data was obtained. The second section had questions directed towards determining the subject's knowledge of the treatment of HIV+ patients. Each statement required the respondent to indicate if the sentence was correct or incorrect. The third section had questions designed to determine the subject's attitude of patients with HIV. This section presented the respondent with statements about HIV+ patients. Respondent agreement was recorded on an ordinal scale from strongly disagree to strongly agree. The statements addressed whether the respondent thought HIV patients deserve equal treatment and if they believed that these patients are at fault for their own disease status. In addition, questions addressed were 'if the respondent believed that it is the responsibility of the dental care provider to treat the patient', and 'if it is safe to treat HIV positive patients for specific procedures'.

Responses were tabulated. Mixed effects logistic regression was used to predict a likelihood of the dental treatments between HIV- and HIV+ patients

RESULTS

Two hundred six dental students from two dental colleges in Nepal responded to the survey with a 65% response rate. The sample consists of 28 third year students, 124 fourth year students and 51 interns. There were 45 males and 159 female participants.

The study demonstrated, 93.6% of participants felt that they should know if the patient is infected with human deficiency virus or not. And also 37.93% students wanted all of their patients to get a blood test to check for HIV. Ninety six percent of students had correct response that individual at high risk for contracting AIDS, including hemophiliacs, homosexuals, bisexuals and IV users. They also had the correct response to the statement 'needle stick can transmit HIV'. Surprisingly, 75.53% of student had incorrect response and said HIV is more communicable than Hepatitis B and 82% of students stated that there is a lot of HIV in saliva of HIV/AIDS patients.

Table 1 shows the logistic regression of the likelihood of dental treatments between HIV negative (HIV-) and HIV+ patients respectively. Respondents differ significantly in their attitude towards dental treatment between HIV- and HIV+ patients ($p<0.05$), with dental treatment more likely to be performed for HIV- patients than the HIV+ patients. The odds ratio of various procedures on HIV- patients ranged from 2.35 for prophylaxis and crowns to 6.84 for extractions.

Table 1. Odds ratios using mixed effects logistic regression for HIV- and HIV+ patients.

	10	≤ 9	Odds ratio	P value
Prophylaxis treatment				
HIV negative	110(55%)	91(45%)	2.35 (1.54-3.58)	<0.01
HIV positive	70(35%)	128(65%)		
Crowns			2.35 (1.49-3.71)	<0.01
HIV negative	92(46%)	108(54%)		
HIV positive	59(30%)	139(70%)		
Extractions			6.84 (4.10-11.42)	<0.01
HIV negative	97(49%)	103(51%)		
HIV positive	25(13%)	172(87%)		
Fillings			3.07(1.96-4.81)	<0.01
HIV negative	114(57%)	87(43%)		
HIV positive	68(34%)	131(66%)		
Implants			5.08 (2.91-8.86)	<0.01
HIV negative	70(36%)	127(64%)		
HIV positive	20(10%)	177(90%)		
Endodontic treatment			3.96 (2.45-6.41)	<0.01
HIV negative	87(44%)	111(56%)		
HIV positive	36(18%)	161(82%)		
Orthodontics			2.91 (1.83-4.64)	<0.01
HIV negative	85(43%)	114(57%)		
HIV positive	44(22%)	153(78%)		
Periodontal scaling			5.54(3.39-9.04)	<0.01
HIV negative	98(49%)	101(51%)		
HIV positive	33(17%)	164(83%)		

Table 2 shows the odds ratios using mixed effects logistic regression for HIV+ patients based on the knowledge of human immunodeficiency virus. Only knowledge regarding HIV status affected the likelihood of providing periodontal scaling. It means a percent increase in their knowledge about HIV increases a likelihood of prophylaxis treatment for HIV+ patients by 1.04 (Table 3).

Table 2. Odds ratios using mixed effects logistic regression for HIV+ patients.

Dental treatments	Odds ratio	P value
Prophylaxis treatment	1.01 (0.98-1.03)	0.60
Crowns	1.02 (0.99-1.05)	0.17
Extractions	1.01 (0.98-1.05)	0.51
Fillings	1.01 (0.99-1.04)	0.43
Implants	1.01 (0.97-1.05)	0.74
Endodontic treatment	1.01 (0.98-1.04)	0.59
Orthodontics	1.01 (0.98-1.04)	0.63
Periodontal scaling	1.04 (1.01-1.08)	0.02

Table 3. Odds ratios using mixed effects logistic regression for HIV+ patients.

Dental treatments	Odds ratio	P value
Prophylaxis treatment	0.27 (0.13-0.56)	<0.01
Crowns	0.29 (0.13-0.63)	<0.01
Extractions	0.32 (0.11-0.92)	0.03
Fillings	0.20 (0.09-0.44)	<0.01
Implants	0.20 (0.06-0.70)	0.01
Endodontic treatment	0.23 (0.10-0.60)	<0.01
Orthodontics	0.51 (0.23-1.12)	0.09
Periodontal scaling	0.30 (0.12-0.76)	0.01

Table 3 shows the odds ratios using mixed effects logistic regression for HIV+ patients based on the negative attitudes toward HIV patients. It shows that overall negative attitudes toward HIV patients significantly affects a likelihood of providing all dental treatments for HIV patients except orthodontics. For example, the odds ratio for prophylaxis treatment is 0.27, which means one unit increase in overall negative attitudes decreases the likelihood of prophylaxis treatments by a factor of 0.73.

DISCUSSION

Most dental students in Nepal felt that, they should know if the patient is infected with human deficiency virus with many indicating that this should be confirmed by a blood test. This attitude is similar to other studies and reflects the fact that health care providers are worried about being infected from their patient.[12] More than a third (36%) of the students also felt that dentists with HIV should not treat patients. Knowledge regarding the HIV infection underlies the principles of management of patients with this condition.[13] Fear of contagion is fostered by a lack of knowledge and understanding of HIV/AIDS and may be improved with appropriate education. The results of this survey suggest that there is a need for improved education to influence attitudes amongst oral health care workers towards HIV and AIDS patients.[14]

To perform effective clinical management, dental students need to be aware of and understand the disease process, recognize the oral manifestation, and understand the mode of transmission of HIV and AIDS.[14] Overall, dental students had good knowledge regarding HIV virus and AIDS. All students had worked with patients who are HIV positive. Thirty-nine percent of student has seen more than 10 patients infected with Human deficiency virus. Ninety-six percent of students had correct response that individual at high risk for contracting AIDS, including hemophiliacs, homosexuals, bisexuals and IV users. They also had correct response to the statement" needle stick can transmit HIV". Surprisingly, 75.53% of student had incorrect response and said HIV is more communicable than Hepatitis B and 82% of students stated that there is a lot of HIV in saliva of HIV/AIDS patients. HIV has been detected in saliva, but in extremely low quantities. Contact with saliva alone has never been shown to transmit the virus.[3] Interestingly there was 50% correct response and 50% incorrect to the statement infection control methods for Hep B provide adequate protection against HIV.

There were discrepancies, when it comes to providing dental treatment to the HIV positive and HIV negative patients. The dental treatment included prophylaxis, fillings, crown and bridge, ortho, endo, periodontal scaling, extractions and implants. Students felt comfortable providing all types of dental treatment to HIV negative patient. In HIV positive, however the response was different. Only 29% choose most likely do prophylaxis and filling on HIV positive, only 18% will most likely orthodontic treatment, only 16% will most likely do endodontic treatment, only 12% will most likely do periodontal scaling, only 10% will most likely do extractions. Appropriate knowledge will instill confidence in students about their own ability to manage HIV positive patient.[15]

Even though the response rate was acceptable, and comparable to most studies, one limitation of this study is that the survey was only conducted in two of the twelve dental colleges of Nepal.[10-15] In addition, there may be a discrepancy in the level of knowledge between different levels of education.

CONCLUSION

This study shows that dental students' knowledge of HIV/AIDS affects their attitudes towards providing care to these individuals and may stem from a lack of understanding of the nature of HIV/AIDS and transmission. To address this deficiency, the dental college curriculum should include evidence-based material on the management of HIV/AIDS patients focusing on psychological aspects. Academic programs should be developed to provide students a common ground to discuss their views regarding knowledge, attitudes, and practices related to various diseases and to overcome the challenges they will face during clinical care.

Since the limitation was survey was done in few dental colleges one of the recommendations will be doing the survey in all the dental college of Nepal. There is also a potential of looking into curriculum and making changes based on the requirement and need of the students.

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