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Original Research Article

Occupational exposure of swine flu to dental practitioners: A qualitative evaluation of preventive practices

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Abstract: The present study was undertaken to carry out a qualitative evaluation of preventive practices against swine flu at a tertiary care government dental college in Northern India. The Methodology was A total of 15 dental practitioners working in various departments of dental college were enrolled in the study and were subjected to a qualitative assessment using a semi-structured protocol targeted to assess the knowledge, attitude and practices of dental practitioners with respect to prevention against swine flu. The data so collected was then categorized according to the themes and is represented in terms of numbers and percentages. In Results The gender ratio of the study was 3:1 (M:F). Out of 15 respondents included in the study, 12 were postgraduate students and 3 were undergraduate interns. Only 1 (16.7%) respondent had knowledge regarding appropriate face mask for prevention against swine flu. Patient assessment at enrolment, practices like wearing face mask, sanitizing hands after procedures, wearing gloves were followed casually with compliance rates ranging from 0% to 66.7%. Practice of using a new set of autoclaved instruments for each patient was practiced only by 1 (6.7%) respondent. Use of other sterilizing agents for each patient was also reported by 1 (6.7%) respondent. None of the respondents were vaccinated against H1N1 A. A total of 4 (26.7%) respondents were not vaccinated against Hepatitis, H1N1 or Tetanus. In Conclusion the preventive practices against H1N1 A influenza were poor in absence of adequate knowledge and attitude of the dental practitioners.
Keywords: Swine flu, Practices, H1N1 A, Dental practitioner

INTRODUCTION

Dental practitioners have to work in close proximity with the patient for prolonged periods. During different dental procedures, the dental practitioners are constantly in contact with a patient and hence they are exposed to an increased risk of contagious diseases especially in case of various contagious epidemics and pandemics[1,2]. Although various professional bodies from time to time issue guidelines in order to restrict the progression of communicable diseases to dental practitioners[3, 4, 5]. However, awareness of these guidelines and inculcation of positive attitude and appropriate practices is often missing [6, 7].

Swine flu or H1N1 influenza is a pandemic which is affecting the Indian population for the last few years[8]. This is a virus of swine origin with hosts being pigs and humans. The transmission of disease initiates when a human being comes in contact with pigs. Modes of transmission are through body secretions/fluids, droplets, aerosols and fomites. The incubation period is about 1 to 7 days and could be as little as 4 days. The route of transmission is from pigs to humans and from humans to humans. The signs and symptoms of disease include cough, sore throat, Rhinorrhea, acute febrile respiratory illness, headache, fever, fatigue, myalgia, vomiting and diarrhea[9]. During the 2015 epidemic, till 20th March, 2015 a total of 31,974 confirmed cases of swine flu were reported from throughout India, out of which a total of 1895 (5.93%) deaths took place[10]. Owing to its transmission through air, the progression and spread of disease it is a major public health threat and all the persons coming in contact with the patient are at a risk. Dental practitioners, owing to the nature of their occupation, have to work in proximity with patients for long duration and therefore they are at an

increased risk of exposure to swine flu when treating a patient with an active disease.

The spread of swine flu has mainly affected the Hong Kong and other South Asian countries in the recent past and regulatory professional bodies and public health departments of different countries have issued specific protective guidelines for general public and health practitioners[11, 12].

The practice guidelines in general stress on the rescheduling of appointments of clinically diagnosed cases, cleaning of hands of patients/parents with alcohol hand gel, placement of displays in waiting areas outlining the symptoms of swine flu and advisory to symptomatic patients to ask for rescheduling of their appointments, placement of disposable tissues and disposable dustbins in waiting rooms, allowing a leave of 7 days to symptomatic staff in the clinics, administration of preventive pandemic vaccination and standard infection control precautions[11].

The standard infection control precautions include maintenance of proper hand hygiene, use of personal protective equipment (viz. appropriate gloves, apron/gown and face protection), equipment decontamination, environmental decontamination and waste disposal [11].

A previous study carried out in Nellore district of Andhra Pradesh, in the year 2009, to assess the knowledge and attitudes of dental practitioners with respect to swine flu influenza highlighted noteworthy and disturbing gaps in knowledge and attitudes of dental practitioners[8]. However, during the last five years, sporadic outbreaks of swine flu in India have highlighted the public health nature of the disease, and Government of India as well as various state governments took initiative to create awareness among the general public with respect to prevention of progression of H1N1 influenza.

The knowledge, attitude and practices of an individual take shape in interaction with the environment and are also affected by a host of factors viz. the age, life stage, gender, education and socioeconomic status of an individual. Hence, study of pattern of knowledge, attitude and practices in varying environments and specific professional groups is of interest, therefore, the present study was carried out to assess the knowledge, attitude and practices of young dental practitioners in a tertiary care government dental college of North India.

MATERIALS AND METHODS

The present study was carried out as a qualitative assessment to describe the gaps in knowledge, attitude and practices of dental practitioners in a tertiary care government dental college of North India. For this purpose, a total of 15 undergraduate and postgraduate dental practitioners handling the patients in different speciality clinics were selected as study samples.

A semi-structured protocol with 10 indicating questions was prepared to assess the knowledge, attitude and practices of the participants. The issues of concern raised in the questionnaire were time of medical check-up of patient, use of protective wear e.g. face mask, knowledge about the specifications of protective wear, use of gloves, washing/sanitizing hands after dental procedures, availability of autoclave, frequency of autoclave use, using other sterilizing agents, frequency of use of other sterilizing agents and protective immunization status. The content validity of the questionnaire was assessed after a focal discussion of the investigators.

All the interviews were made by a single examiner. Before conducting the interviews, another team member conducted a mock interview. Following this mock interview, rephrasing of two questions was done to improve their comprehension. A flexible approach was used and to explain the questions to the participant in case any difficulty in interpretation took place.

The data obtained has been shown as numbers and percentages.

RESULTS

The age of respondents ranged from 22 to 32 years with a mean age of 26.27±2.96 years. A total of 12 (80%) were males and 3 (20%) were females. Among the respondents, 3 (20%) had undergraduate qualification and 12 (80%) had postgraduate qualification. All the respondents were involved in group practice. Mean years of practice was 3.87±1.85 years ranging from 2 to 9 years (Table 1).

We enquired the respondents regarding the time of medical check-up of patients in order to ascertain and restrict the entry of active carriers of disease in dental clinics. The general response obtained from all the respondents was that medical check-up of patients was done only if suspicion of an infectious disease is observed.

On being asked to describe the practice of wearing face mask while carrying out dental procedures – two-third of respondents (n=10; 66.7%) reported of wearing the face masks always while remaining 5 (33.3%) reported to wear these sometimes.

Only one (6.7%) respondent had the knowledge about appropriate face mask for protection against H1N1. Practice of washing hands after procedures was always practiced by 10 (66.7%) respondents and

sometimes by 4 (26.7%) respondents. There was one respondent who did not use to wash hands after procedures. All the respondents reported of availability of autoclave, however, use of autoclaved instruments for each patient was reported only by 1 (6.7%) respondent. Once a day autoclaving of instruments was reported by 12 (80%) respondents. There were 2 (13.3%) respondents who did not autoclave the instruments at all.

A total of 7 (46.7%) respondents reported of using other sterilizing agents for the instruments – 6 (40%) reported using it once a day while 1 (6.7%) reported using it for each patient.

Majority (n=8; 53.3%) were vaccinated against Hepatitis and almost half (n=7; 46.7%) were vaccinated for tetanus, however, none of them were vaccinated against H1N1. There were 4 (26.7%) respondents had no vaccination.

Table-1: Profile of Respondents

SN	Characteristic	Statistic
1.	Total number of respondents	15
2.	Mean Age ± SD (Range) in years	26.27±2.96 (22-32)
3.	Male: Female	12:3
4.	Qualification	
	BDS	3 (20%)
	MDS	12 (80%)
5.	Practice type	Group practice
6.	Mean Years of practice±SD (range)	3.87±1.85 (2-9)

Table 2: General Direction of Knowledge, Attitude and Practice responses

SN	Characteristic	Statistic
1.	Time of medical check-up and history taking of patients	
	At enrolment	0
	Before dental examination	0
	Before dental procedures	0
	Only when suspicion of an infectious disease is there	15 (100%)
2.	Wearing face mask during dental procedures	
	Sometimes	5 (33.3%)
	Always	10 (66.7%)
3.	Knowledge regarding appropriate face mask for protection against H1N1	1 (6.7%)
4.	Wearing gloves during procedures	
	Sometimes	6 (40%)
	Always	9 (60%)
5.	Sanitizing hands after procedures	
	No	1 (6.7%)
	Sometimes	4 (26.7%)
	Always	10 (66.7%)
6.	Availability of autoclave facility	15 (100%)
7.	Autoclaving instruments	
	Always for each patient	1 (6.7%)
	Once a day	12 (80%)
	Do not sterilize	2 (13.3%)
8.	Using other sterilizing agents	7 (46.7%)
9.	Frequency of using other sterilizing agents	
	For each patient	1 (6.7%)
	Daily	6 (40%)
10.	Vaccination against	
	Hepatitis	8 (53.3%)
	H1N1	-
	Tetanus	7 (46.7%)
	No vaccination	4 (26.7%)

DISCUSSION

The basic principle of public health is - prevention is better than cure. We can prevent ourselves against inflicting and transmitting communicable diseases by having a sound knowledge about the contemporary environmental threats and adopting and inculcating healthy preventive attitudes and practices.

In this qualitative study, some concerning issues related with knowledge, attitude and practices of dental practitioners in a tertiary care government dental college of Northern India with respect to communicable diseases in general and swine flu in particular. In general, the knowledge regarding protection against swine flu was impaired and practices adopted were poor. It was concerning to note that while the pandemic swine flu was making news throughout northern India, only 1/15 (6.7%) dental practitioners had knowledge regarding the appropriate face mask to be used. It was disturbing to see that medical check-up and history taking of patients was being done only when suspicion of an infectious disease was observed. On enquiring regarding what prompted the dental practitioners to have this suspicion, it was reported that active clinical symptoms of an infectious disease were the basis of this suspicion. It was also concerning to see that practices like sanitizing hands after procedures, wearing appropriate face masks and gloves during the procedures and sanitization of instruments were done casually. It was surprising to see that despite the availability of infrastructure, the autoclaving of instruments was being done routinely only and no specific preventive measures to avoid patient to patient transmission of disease through contaminated instruments were being taken. Use of alternate sterilizing measures was also being done too casually with majority (53.3%) doing it only routinely and not specifically. It was surprising to see that vaccination against communicable diseases in general was very poor, however against swine flu, the situation was even worse with no practitioner being vaccinated against the disease.

Our study was quite small in nature, mainly a spot analysis for the purpose of qualitative assessment of the problem in a specific environment, however, the findings in this small assessment were similar to those reported in several other studies from India and abroad[8, 13, 14, 15]. All these studies have highlighted that even those having good knowledge; its transformation into healthy attitudes and practices is often difficult.

It is disturbing that most of the information and knowledge regarding swine flu comes through informal sources, such as television, radio, internet, newspapers, etc. [15], thus implying that official information in terms of inclusion of this deadly disease in the curriculum is missing and needs a quick response. Moreover, it seems that most of the practitioners consider the preventive measures against communicable disease to be practiced in community rather than their implementation in clinical practice too.

What is the way out then? Araujo and Andreana[6] in their recommendations to modify the attitudes and practices of dental practitioners with respect to prevention of infectious diseases in dentistry suggested development of a written protocol for instrument reprocessing, operatory cleanup, and management of injuries. Taking in consideration the recurring nature of H1N1 influenza in our country, it is essential that a written protocol for dental facilities should be developed and implemented. Surprisingly, despite the recurring nature of swine flu, practice of vaccination against this deadly menace is almost absent. In view of the seasonal nature of this disease, it is recommended that a vaccination against H1N1 influenza during the beginning of October should be made mandatory for all the dental practitioners. We also recommend that adaptation of good clinical practices with respect to spread of communicable diseases from patient-to-patient, patient-to-dentist and from dentist-to-patient should be made part of assessment criteria at undergraduate level and appropriate credits should be accorded to the students.

CONCLUSION

Our study was a small and quick assessment of a grave problem, however, it substantiated the findings in larger studies done previously and substantiated that no change in situation has taken place so far. This is an alarming and callous approach towards a severe health issue. It is a wakeup call for public health planners and professional bodies to issue specific advisories and to ensure their strict implementation in order to curb this pandemic from assuming still graver magnitudes.

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