



Brief report

Patients' perception of infection prevention in dental practice

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Patient's perceptions of risk from bloodborne viruses (BBVs) and variant Creutzfeldt-Jacob Disease (vCJD) in relation to attendance at dental practice is understudied. This survey of an opportunistic sample of 50 dental practice patients examined patients' perceptions of the risk of acquiring BBVs and vCJD following dental treatment. Major concerns of patients revolved around hand hygiene practices rather than risks from BBVs or vCJD. No patient had avoided or delayed a visit to the dentist because of concerns over risks of cross infection.

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Concerns over possible transmission of BBVs were highlighted in the 1980s following the emergence of HIV.¹ The last decade has seen heightened awareness over cross-infection risks associated with variant Creutzfeldt-Jacob Disease (vCJD), which emerged during the mid-1990s. The challenge from infectious prion proteins is somewhat different to that from HIV in that the infectious agent is far more resistant to conventional inactivation methods.² Furthermore, much remains unknown about the distribution of infectious prion proteins in the oral cavity³ and the efficacy of transmission by contaminated dental instruments.⁴ Work from a number of animal model experiments suggests transmission via dental treatment is at least biologically plausible.⁴

Reports on inconsistencies of instrument decontamination have heightened concerns over the risks of transmission of infectious agents,^{5,6} reinforced by risk assessments.⁷ Whereas there are a number of reports in the literature of patients' perceptions of risk in relation to the acquisition of HIV and dental treatment,^{8,9} little work has been performed on patients' perceptions of risk from vCJD

following dental treatment. The aim of this study was to determine patients' perceptions of the risk of acquiring BBVs and vCJD following dental treatment.

MATERIALS AND METHODS

Questionnaire

A questionnaire was designed incorporating questions from a number of earlier studies^{8,9} and piloted on 12 members of the public. The questionnaire was modified in response to feedback and restricted to 16 closed questions. There were 8 questions with simple yes/no responses; other questions provided a range of options for responder's in the context of their perception of risk from BBVs and vCJD. (A copy of the questionnaire is available from the corresponding author on request.)

Study population

The study population comprised an opportunistic sample of 50 patients attending dental practices within the Glasgow area. The study cohort comprised members of the public in a Glasgow City center location (G2 3JZ), who were directly invited to participate and complete the questionnaire. No record was kept of response rates.

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Conflicts of interest: None to report.

RESULTS

Fifty patients completed the questionnaire, and the age distribution of respondents comprised 40% ($n = 20/50$) in the 44 to 64 years age group, 38% ($n = 19/50$) in the 18 to 34 years age group, 14% ($n = 7/50$) in the 35 to 44 years age group, and 8% ($n = 4/50$) in the 65+ years age group, with 44% ($n = 22/50$) of respondents being male. Most patients ($n = 47/50$; 94%) received dental treatment in general dental practice where the main reason for attending was for a routine checkup ($n = 44/50$; 88%), with 58% ($n = 29/50$) attending the dentist within the preceding 6 months. A minority of those questioned only attended in the event of a dental emergency ($n = 18/50$; 36%), and 10% ($n = 5/50$) of those questioned had attended the dentist greater than 2 years previously.

The results concerning patients' knowledge and perception of glove wearing by dental practitioners are summarized in Table 1 and are compared with findings from general practice patients questioned during the 1990s ($n = 101$) from a similar geographic area.⁸ The majority of patients ($n = 38/50$; 76%) was concerned that dental gloves were reused between patients, and 66% ($n = 33/50$) expressed concerns over lack of hand hygiene between changing gloves for dental treatment.

Dental patients thought that either autoclaving ($n = 18/50$; 36%) or a combination of methods ($n = 13/50$; 26%) was used to sterilize instruments; however, 20% ($n = 10/50$) of respondents were unsure of the instrument sterilization methods used in dentistry. The response to the likelihood of transmission of HIV and hepatitis B in dental practice is summarized in Table 2. Over 80% ($n = 40/50$) of respondents thought it either unlikely or extremely unlikely that HIV or hepatitis B could be transmitted in the dental surgery. With regard to perception of risk from acquiring vCJD following dental treatment, 82% ($n = 41/50$) thought this unlikely or extremely unlikely; however, 17% ($n = 9/50$) of respondents were unsure of the risks associated with vCJD and dental treatment. Of the patients surveyed, no patient avoided or delayed a visit to the dentist because of anxieties over risks of cross infection.

DISCUSSION

This study provides an insight into the public perceptions of cross-infection risk following dental treatment, and, by comparing to a similar cohort assessed some 20 years previously when concerns over transmission of HIV and hepatitis B following dental treatment were high,⁸ provides an indication of changing risk perceptions. The study findings are influenced by the demographics of the cohort of patients questioned because there was a high proportion of regular attenders. Irregular attenders may have different perceptions of cross-infection risks, and this could be a factor in their irregular attendance. In addition, the relatively small sample size must be interpreted with caution. Of interest is the observation that patients in this survey appear to be more informed over the use of personal protective equipment, such as gloves and protective face masks, and are now more likely to recognize that the dentist wears personal protective equipment to protect the patient rather than the dentist. In contrast to the earlier study,⁸ patients seem more likely to perceive that the reuse of gloves is unacceptable and that lack of hand hygiene between glove changing is a concern. These changes in perceptions may be due to increased awareness by the general public of the role of hand hygiene in infection prevention because of recent high-profile campaigns to encourage health care workers to improve hand hygiene.

Patients' knowledge of the instrument sterilization methods used in dentistry appears to recognize that boiling water is no longer used to "sterilize" dental instruments. Patients' knowledge

Table 1

Patients' opinions and knowledge of glove wearing by dental surgeons

Question	General practice patients, n (%)	
	Glasgow 1990*	Glasgow 2006
Aware that dentists have been advised to wear gloves routinely	57 (57)	35 (74)
Dentists wear gloves for their own protection	83 (82)	27 (57)
Dentists wear gloves to protect patients	63 (62)	35 (74)
Do not mind dentists wearing gloves during treatment	95 (94)	47 (100)
Do not mind the reuse of gloves (after washing with a disinfectant) on different patients	61 (62)	12 (25)

*Data from Samaranyake and McDonald.⁸

Table 2

Patients' assessment of the risk of contracting BBVs or vCJD in general dental practice

Response	HIV, n (%)		Response	Hepatitis B, n (%)		vCJD, n (%)	
	Glasgow 1990*	Glasgow 2006		Glasgow 1990*	Glasgow 2006	Glasgow 1990*	Glasgow 2006
Very likely	5 (5)	2 (4)	Very likely	6 (6)	1 (2)		
Likely	4 (4)	2 (4)	Likely	6 (6)	0		
Unlikely	25 (25)	14 (30)	Unlikely	25 (25)	14 (30)		
Extremely unlikely	51 (50)	26 (55)	Extremely unlikely	34 (33)	24 (51)		
Don't know	16 (16)	3 (6)	Don't know	30 (30)	8 (17)		

*Data from Samaranyake and McDonald.⁸

of instrument sterilization has improved over the last 20 years and may reflect their attitudes toward the risk of contracting HIV and hepatitis B.^{8,9}

Patients perceived that the risk of contracting vCJD following dental treatment is also low; however, a sizeable proportion did not know the risk. Risk estimation of susceptibility to health problems is influenced by a psychologic phenomenon known as unrealistic optimism.¹⁰ Risk perception, therefore, may not be driven by rational thought. These cognitions are very likely to be influenced by quantity, content, and frequency of media coverage of this problem and especially the more recent media interest in vCJD transmission. Practitioners may, therefore, wish to reflect on the importance of communicating to patients efforts undertaken to reduce risks of cross infection to their patients.

In conclusion, this study highlights some perceptions of cross-infection risk in general dental practice. In terms of hand hygiene, there now seems additional support from the patients' perspective to cease the practice of washing gloves between patients and to use alcohol hand rubs after glove changes. In terms of patients' perceptions of methods used to sterilize instruments, the dental profession may reflect that it is perhaps timely to become more proactive in highlighting investments and improvements made most recently in reprocessing of dental surgical instruments.

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