PREVENTIVE ATTITUDES TOWARDS INFECTION TRANSMISSION IN DENTAL OFFICES IN NORTH-EAST ROMANIA (Abstract)

Aim: The aim of this study was to evaluate the level of knowledge and the current attitudes towards infection control in the dental offices in the Northeast Romania. Material and methods: Questionnaire-based study conducted on 152 dentists aged between 25-65 years practicing in 6 Northeast Romania counties. The questionnaire included questions related to current infection control procedures and attitudes. Data were statistically analyzed using SPSS 14.0 and chi-square test (p<0.05). Results: The majority of the dentists (83.6%) consider that universities should provide a substantial education regarding infection control through postgraduate courses, but 7.2% of the respondents are not sure about their usefulness. The clinical decision related to patient’s treatment is influenced by his infectious status for 67.8% of the dentists. Of these, 19.1% have over 20 years of practice and 48.0% are females. Almost all dentists (93.4%), regardless of gender (96.4% females and 87.8% males) undergo periodic testing for blood-borne viral infections (hepatitis B, C and HIV). Full protective equipment is used for all the patients by 86.2% of the dentists, while 12.5% use it only for the infectious ones. 65.2% of the dentists use steam sterilization equipment (autoclave), and 80.8% use dry heat. The majority of the dentists (82.6%) believe that the patient must always be informed about the adopted infection control measures, but 21.7% declare to do so only in some particular cases. Conclusions: Dentists knowledge and attitudes towards infection control must be improved by educational interventions in order to adhere to the European standards. Keywords: DENTAL OFFICE, INFECTION CONTROL, EDUCATION

Occupational health of oral health care personnel and patient safety are of particular importance warranting imposition of rigorous rules of professional conduct in view of meeting the European safety standards of healthcare in the dental office (1).

MATERIAL AND METHODS
In order to assess the attitudes towards infection prevention and control in dental offices in North-east Romania, in the interval January-February 2011 we conducted a questionnaire-based study involving 152 dentists, 62.4% women and 37.6% men, aged between 25 and 65 years, working at private dental offices in 6 counties of Moldova: Iasi, Botosani, Neamt, Suceava, Bacau and Vaslui.

This study was part of a market research survey conducted in 5 development regions
of Romania in order to identify the current situation and current needs in the field of prevention, ergonomics and management. (European Project "ergonomics, prevention, performance management in dentistry by adopting European Standards, Contract: POSDRU/81/3.2/S/55651).

The questionnaire included 21 questions with one or more correct answers on the attitude of physicians towards infection control procedures established in dental offices.

The results were interpreted according to gender and years of practice and compared with those obtained by a study covering all Romanian regions. Data were processed using SPSS 14.0 system, and compared using Chi-square test ($p < 0.05$). The approval of the Ethics Committee of the University of Medicine and Pharmacy "Grigore T. Popa" Iasi was obtained.

**RESULTS**

Analysis of responses showed that the majority of dentists (83.6%) considered necessary a substantial education in infection control both during university studies and postgraduate education, but 7.2% of respondents were unsure about their usefulness. Comparing these results with those of the nationwide study, it came out that the percentage of those not giving great importance to this knowledge was significantly higher (7.2% versus 1.9%).

Therapeutic approach in clinical practice was influenced by patient’s infectious status in 67.8% of the dentists. Of these, 19.1% had over 20 years of practice and 48.0% were women. These values are close to those reported by the nationwide study (57.0 %, 19.2% and 23.7%, respectively) (fig. 1).

Most dentists (82.6%) believe that patients should be constantly informed on infection control measures taken in the dental office, but 13.0% say they do so only in special cases.

![Fig. 1. Influence of patient’s infectious status on therapeutic approach](image1.png)

Full protective equipment (gown, gloves, mask, goggles) is used for all patients by 86.2% of dentists, while 12.5% of them use it only for patients considered infected. Slightly more women (72.9%) use full protective equipment than men (68.4%). Nationwide data were: 90.2% and 9.8%, respectively (fig. 2).

![Fig. 2. Use of full protective equipment](image2.png)

In North-east Romania 98.9% of dentists use rubber gloves, 98.6% masks, and 53.9% goggles.

62.2% of doctors are immunized against hepatitis B. The majority of physicians (93.4%), with no significant gender difference (96.4% women and 87.8% of men) say they carry out periodic testing for blood-borne diseases (hepatitis B, hepatitis
Preventive attitudes towards infection transmission in dental offices in northeast Romania

As to sterilization methods, 80.8% of the dentists use dry heat sterilization (Po-pinel), 65.2% moist heat (autoclave), and 8.7% resort to chemical sterilization (fig. 3). Data obtained for Romania were 63.5%, 75.5% and 8.9%, respectively.

![Fig. 3. Sterilization methods used in Northeast Romania dental offices](image)

**DISCUSSION**

Assessment of adherence to infection control recommendations is essential for estimating the safety and predictive risk factors for patients and medical staff in dental offices.

Immunization is an important measure in the dental office occupational protection, as the oral healthcare personnel belongs to a risk category due to direct contact with blood or other body fluids. The study results show a small percentage of dentists immunized against hepatitis B (62.2%) compared with data reported in the literature: 93% - USA, 91% - Canada, 86% - England (2).

Hand hygiene is considered the most effective measure to reduce the risk of transmission of pathogens in healthcare facilities (3). Our results show that only 25% of the dentists wash their hands or use hand sanitizers before applying protective gloves although these do not provide complete protection against pathogen (4).

Protection provided by the use of protective equipment is scientifically substantiated and is one of the basic rules of Universal Precautions (5). Goggles and masks significantly reduce mucosal exposure, and gloves are remarkably effective in reducing occupational exposure to diseases transmitted via blood at hand skin level (6, 7). The evaluation of doctors’ attitudes demonstrated a good compliance (86.2%) in wearing full protective equipment (gown, mask, goggles, gloves) used with all patients regardless of infectious status or clinical procedure. The results show an increase in the compliance level compared with than reported by Bârlean et al. (full equipment: 68.4%) (8). A lower proportion of physicians (53.9%) use goggles ignoring the risk of infection transmission to the eyes.

Devices used to sterilize dental instru-
ments are mainly represented by dry-heat autoclave (80.8%), but the number of dentists using moist heat autoclave is increasing (65.2% compared to 40.2% in our 2007 study) (9). Although guidelines and recommendations of the European organizations restrict chemical sterilization in dentistry, our study shows that 8.7% of the dentists in Northeast Romania and 8.9% in all Romania use of this method (10).

Control of dental unit waterlines contamination is not a major concern for dentists as only 12.3% of them use germicidal products for decontamination (11).

The comparative assessment of the results showed that the level of knowledge and current practices of infection control of the dental practitioners in Northeast Romania corresponds to the levels revealed by the study in 5 development regions of Romania.

CONCLUSIONS
Assessing current attitudes and practices regarding infection control procedures in dental offices in the Northeast Romania has shown the need to promote a realistic perception of the risk of infection transmission and to implement specific measures for the protection of oral healthcare personnel and patients in view of adhering to the European standards.

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REFERENCES