

Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin

Educational intervention for preventing bloodborne infection among medical students in China

Z. Zhang^{a,b,*}, T. Yamamoto^a, X.N. Wu^c, K. Moji^d, G.X. Cai^{d,e}, C. Kuroiwa^f^a Department of International Health, Institute of Tropical Medicine (NEKKEN), Global Center of Excellence, Nagasaki University, Nagasaki, Japan^b Japan Foundation for AIDS Prevention (JFAP), Tokyo, Japan^c Fujian Medical University, Fujian, China^d Research Institute for Humanity and Nature, Kyoto, Japan^e Chinese Center for Disease Control and Prevention, Beijing, China^f Yotsukaido Tokushukai Medical Center, Chiba, Japan

ARTICLE INFO

Article history:

Received 20 October 2009

Accepted 18 December 2009

Available online xxx

Keywords:

Bloodborne infection

Chinese medical students

Educational intervention

Intervention programme

SUMMARY

Although medical students are known to be at risk for bloodborne infections, there have been no systematic studies, effective intervention programmes, or guidelines for them in China. We developed prevention guidelines, implemented an intervention, and evaluated the effectiveness of knowledge among medical students. This study was designed as a cluster randomised controlled trial. All those who completed a consent form were randomly assigned either to an intervention or to a control group. The intervention group underwent an educational intervention programme consisting of a series of lectures and videos following a baseline survey. The control group completed the same intervention programme after the study was completed. A questionnaire of 25 items was sent to participants three months and nine months after the initial intervention programme. Outcomes measured before and after intervention included knowledge of transmission route, first-aid care, and post-exposure prophylaxis. Pearson's χ^2 -test was used, and the efficacy of students was analysed to control for bias. Intervention in the form of a one-time bloodborne pathogen educational prevention programme for Chinese medical students had little effect on knowledge.

© 2010 The Hospital Infection Society. Published by Elsevier Ltd. All rights reserved.

Introduction

Bloodborne infections such as human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV) infections are a great burden to healthcare workers around the world because of the high probability of exposure to blood in the workplace.^{1–3} The risk of seroconversion after a single percutaneous exposure to infected blood ranges from 39.0% for hepatitis C to 37% for hepatitis B and to 4.4% for HIV.¹ An estimated three million healthcare workers are exposed to at least one percutaneous injury from a sharp object contaminated with HCV (0.33 million), HBV (2.1 million), or HIV (0.93 million) each year. Not only healthcare workers but also medical students need to pay attention to these

risks.^{4–7} Lack of practical experience and/or technical expertise leaves medical students at high risk of acquiring bloodborne infections during their training.^{8–10} The introduction of safety measures to prevent accidental bloodborne infections in school curricula is therefore required.¹¹ However, the magnitude of the health burden, caused by bloodborne infections in China, has been poorly understood. Although educational programmes have produced positive changes in knowledge on safety protocols in some countries,^{11,12} little is known concerning protection of medical students in China.¹³ Only one cross-sectional study, conducted in northeast China, revealed that most medical students are eager to learn about preventive measures for bloodborne pathogens.¹⁴

There are no consistent national guidelines on bloodborne pathogens in China, except for HIV.^{15,16} This situation motivated us to conduct the current study to meet at least two needs: (i) more comprehensive prevention guidelines for bloodborne pathogens; (ii) an effective intervention programme for bloodborne pathogens. To accomplish these objectives, an educational intervention programme was designed and implemented.

* Corresponding author. Address: Department of International Health, Institute of Tropical Medicine (NEKKEN), Global Center of Excellence, Nagasaki University, 1-12-4 Sakamoto, Nagasaki 852-8523, Japan. Tel.: +81 95 819 7869; fax: +81 95 819 7869.

E-mail address: zzhuozhang@gmail.com (Z. Zhang).