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Hepatitis B: A cross-sectional survey of knowledge, attitudes and practices amongst backpackers in Thailand

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ABSTRACT

Background: In 2013, 200 million tourists visited countries that are endemic for hepatitis B virus (HBV). Backpackers are potentially at greater risk of hepatitis B than other travellers yet exposure to HBV remains under researched in this population.
Method: A cross-sectional survey of backpackers visiting two islands in Thailand was performed during early 2015. Participation in activities with high HBV exposure risk was recorded, alongside rates of vaccination and an evaluation of knowledge and attitudes towards the risk of HBV.
Results: 1680 questionnaires were completed and analysed; the median participant age was 24 (range: 18–68) and 47.9% were male. 20.8% took part in activities with a high risk of HBV exposure. Over two-thirds of the sample were not protected against HBV. 24% were able to correctly identify HBV transmission methods. 44.1% underestimated the risk of HBV in Thailand.
Conclusions: The proportion of backpackers participating in high-risk activities was double the level found in previous studies that have examined the HBV exposure risk amongst travellers to endemic countries. Voluntary risk activities were the largest source of potential exposure to HBV and rates of vaccination are low. Backpackers should be considered for routine vaccination and education on risk behaviours should be included in the pre-travel consultation.

1. Introduction

Hepatitis B is a viral infection that can cause a spectrum of liver disease including acute illness and long-term complications [1]. The heaviest burden of diseases is in Asia and Sub-Saharan Africa [2]. A vaccine for hepatitis B virus (HBV) has been available since 1986; it reduces rates of hepatitis after exposure and is ninety-five per cent effective at preventing chronic carriage of HBV [3]. HBV is one of the commonest vaccine-preventable diseases in travellers [4]. Since the 1950s, international tourism has shown almost uninterrupted growth: the fastest growing destination, South East Asia, is a high HBV endemicity region [5,6]. In 2013, 200 million tourists visited countries where more than five per cent of the population are chronic carriers of HBV [5,6]. Travellers from countries with low HBV prevalence are particularly at risk as either vaccination or previous infection is required for immunity.

HBV is transmitted by contact with infected blood or bodily fluids either through the skin (percutaneous) or through mucosal membranes (transmucosal). Infection by sexual contact, contaminated medical or dental equipment and skin penetrating procedures occurs in all intermediate and high prevalence countries [2,7]. Hepatitis B presents a risk both to non-immune travellers and, on returning home, to their close contacts [8]. The World Health Organisation (WHO) has recommended universal vaccination against HBV since 1992 but some western countries, including the United Kingdom (UK), have opted for selective vaccination strategies based on individual risk factors [9]. Vaccination for travel is not routine: the Department of Public Health England suggests a decision should be made depending on the duration of travel, planned activities and the destination's HBV prevalence [10]. Vaccination is expensive and usually paid for by the individual [11].

Backpackers are a distinct subset of international travellers; they typically travel for longer durations, alone or in small groups and stay in low-cost accommodation [12]. As backpackers are typically younger than other travellers they are less risk-averse and more likely to engage in adventurous activities [12]. These factors combined place them at greater risk of contracting hepatitis B than other travellers, yet exposure to HBV remains under researched in this population. Thailand is a popular backpacker destination and

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the WHO classifies the country as having 'intermediate-high' HBV prevalence, as 5–6% of adults are chronic carriers [6].

This study aims to determine the proportion of backpackers visiting two islands in Thailand who are at high risk of HBV exposure and identify the factors associated with exposure, immunisation and seeking pre-travel health advice.

2. Method

2.1. Design

Cross sectional survey.

2.2. Setting

The research was conducted at the ferry ports of two islands, which are popular with backpackers: Ban Mae Haad, Koh Tao and Thong Sala, Koh Phangan in Thailand.

2.3. Participants

Backpackers, defined as travellers on a limited budget, staying in low cost accommodation and carrying their belongings in a backpack [12], who were able to understand spoken and written English, were recruited for the survey. Thai nationals were excluded as data suggest that tourists on domestic vacations behave differently to those on international trips [13]. Individuals who lacked capacity or were under 18 years of age were also excluded. In accordance with the University of Birmingham's policies, US citizens were excluded from the survey.

2.4. Data collection

Data were collected during February and March 2015. Participants were recruited using convenience sampling [14]: two researchers (GF & EM) approached travellers, in possession of a backpack, who were waiting to board outward-bound ferries. The study was explained and if the participant self-defined as a backpacker – 'an individual travelling on a limited budget and staying in low cost accommodation' - and met the inclusion criteria they were invited to take part in the study. No cut-offs were used to define a limited budget or low-cost accommodation. Participants were provided with an information sheet and questionnaire to complete and return to the researcher. Ethical approval for the study was sought from an Internal Ethics Committee at the University of Birmingham (Reference number: 2014-15/C1/LJ/05).

2.5. Instruments

The questionnaire consisted of four sections, (i) demographic data (ii) pre-travel health advice (iii) health problems and health service usage (iv) HBV knowledge, attitudes and practices (). Section (iii) data relate to a study conducted by another University of Birmingham student.

Protection against HBV was classified as having completed a vaccination schedule (3 or more doses) or reporting a previous HBV infection [15]. Potential exposure to HBV was assessed by asking the participants if they had taken part in risky activities classified as 'low' and 'high' risk; high-risk activities involved skin perforation or unprotected sexual contact whilst low risk activities were documented transmission routes that did not involve skin perforation or unprotected sexual contact (Table 1) [16].

2.6. Data analysis

Data were analysed using IBM SPSS Statistics v22 (IBM Corp, Armonk, NY, USA); the demographic data were examined and the sample characteristics presented. The median age was presented as the distribution was positively skewed. The proportions of participants who had participated in high HBV risk activities and reported completed vaccination schedules against HBV (3 or more doses) were calculated. Binary logistic regression identified associations between exposure or completed vaccination schedule and the pre-selected variables (Table 2). Knowledge scores were calculated by awarding one mark per correctly answered question and making a total score (range 0–9). The median total score was calculated, as the data were not normally distributed.

3. Results

Of the 1825 individuals who consented to take part and completed the survey, the questionnaires from 1680 participants were usable and analysed (Fig. 1 Recruitment Flowchart). The median age of the sample was 24 years (IQR 6; Range 18–68), 802 (47.9%) were male. 1325 (79.5%) of the sample were residents of Europe, 239 (14.3%) were from Canada, Australia and New Zealand. The remaining 6% was made up of residents from South America, Africa and Asia. The demographic characteristics of the sample are shown in Table 3.

3.1. Pre-travel preparation

Pre-travel health advice was sought by 1346 (80.1%) of participants; the most popular source of pre-travel information was the Internet followed by relatives/friends. Of the 1202 (71.5%) participants who answered the questions concerning topics of advice received from a health care professional, 761 (63.3%) recalled receiving information of HBV risk factors and 835 (69.5%) recalled receiving advice about the HBV vaccine.

3.2. Knowledge of HBV

The median knowledge score was 5 (IQR = 4) out of a total possible score of 9; these questions were answered by 1592 (94.8%) of the 1680 participants. 370 (24%) participants correctly answered that HBV can be transmitted by blood and sexual contact but not by contaminated food and water or toilet visits.

3.3. Attitudes towards HBV

When asked to estimate the risk of HBV in Thailand, 740 (44.1%) participants either did not know or considered the risk to be low. 510 (30.4%) participants considered themselves to be at risk of HBV whilst 632 (37.1%) did not considered themselves at risk, the remainder were unsure. The majority of participants considered vaccination to be effective at preventing infection, while 24.5% were unsure whether it was effective.

3.4. Practices: exposure risk and immunisation

332 (20.8%) participants took part in one or more activity with a high HBV exposure risk (Table 4). 381 (22.7%) participants reported taking part in an activity with a low associated exposure risk. 1010 (60%) of the sample did not report a high or low risk activity.

Of the 1277 individuals reporting vaccination against HBV, 397 (31.1%) had completed the schedule (three or more doses) whilst 561 (43.9%) had received either one or two doses; 319 (25%) did not know how many doses they had received. 504 (30.0%) of the