

BED BUGS, HOTELS, AND TRAVELERS: ATTITUDES AND IMPLICATIONS

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Abstract Bed bugs, *Cimex lectularius*, occur wherever there is human activity. While infestations are most common in homes and apartments, they are also prevalent in hotels, raising questions about their impact on travel and tourism. To investigate how much the public knows and cares about bed bugs while traveling, we implemented the first nationwide survey of hotel patrons traveling in the U.S. for leisure and business. While the majority of respondents had limited understanding or experience with bed bugs (two-thirds could not identify the bed bug in a lineup of other household insects), the pests evoke fervent responses in most travelers. Compared to other hotel room issues such as odor or lack of cleanliness, evidence of bed bugs is far more likely to cause guests to switch hotels and seek compensation. When booking accommodations online, the majority of respondents stated that a single report of bed bugs would cause them to choose another hotel. Widespread reliance on social media and online reviews when booking accommodations makes the hotel and lodging industry acutely vulnerable to reports of bed bug infestation, irrespective of whether they are accurate. Most respondents wanted to know if their assigned room had a previous bed bug issue, even if it occurred long ago. Travelers also favored hotels with a protective service plan for bed bugs in place (preventive inspections, bed encasements, etc.). Demographic characteristics of respondents generally provided little indication of which segments of the population are most concerned about bed bugs. Rather, attitudes and apprehensions appeared to be universal.

Key words Survey, social media, online reviews, misidentification

INTRODUCTION

The resurgence of the bed bug, *Cimex lectularius* L, has been well documented in the United States and throughout the world (Boase, 2001; Doggett et al., 2004; Potter et al., 2010). While infestations are most common in homes and apartments, three-fourths (75%) of pest management professionals in the United States also report finding bed bugs in hotels and motels (Potter et al., 2015), which raises questions about the impact of this pest on travel and tourism.

In the U.S., nearly five million people stay in hotels and motels nightly, 60% traveling for leisure, 40% for business (AHLA, 2015). Industry statistics indicate there are about 53,000 properties and almost 5 million guestrooms, producing \$176 billion in annual revenue. As part of the broader, \$1.4 trillion U.S. travel and tourism industry, hotels and motels also influence many interrelated businesses, including airlines, cruise ships, restaurants, car rental firms and travel agencies. To investigate how much the public knows and cares about bed bugs while traveling, we implemented a national survey of hotel patrons.

MATERIALS AND METHODS

The survey was conducted in May 2015 utilizing the online survey and market research firm Qualtrics (Provo, Utah, U.S.A.). Six rounds of refinement with focus groups occurred before survey deployment. We used an 64-item questionnaire, of which 15 questions pertained directly to traveler awareness, experience and attitudes toward bed bugs. Additional questions surveyed respondent habits when booking and staying in hotels (e.g., frequency, price, desired amenities) and demographics (gender, age, education, etc.). To encourage broad participation and minimize bias, participants initially were told only that they would be asked about attitudes and preferences involving hotels. Questions pertaining to bed bugs were presented later in the survey.

Respondents included 2088 people representing all 50 states and the District of Columbia — 1,298 who travel mainly for leisure and 790 traveling for business. Business travelers were defined as those who stayed in hotels for work-related reasons at least seven nights in the past year. Demographics of travelers participating in the study are presented in Figure 1.

RESULTS AND DISCUSSION

Familiarity with Bed Bugs

One series of questions evaluated traveler familiarity with bed bugs. When respondents were shown a lineup of enlarged, black silhouettes of an ant, termite, louse, bed bug and tick, only 35% of business travelers, and 28% of leisure travelers correctly identified the bed bug (Figure 1). Additionally, a substantial proportion of business (29%) and leisure (42%) travelers admitted not knowing (i.e. did not even guess). This has important ramifications for hotels because a person's stated encounter with bed bugs might be erroneous, as has been the case in recent news stories where allegations of bed bugs have been made on social media (N.A., 2016). Ramifications of a false report can be costly to the proprietor, who often must respond with a professional pest control service and compensating the complainant. Moreover, the hotel's reputation can be harmed if the guest decides to post an online review even if it is later determined that what they found was not a bed bug.

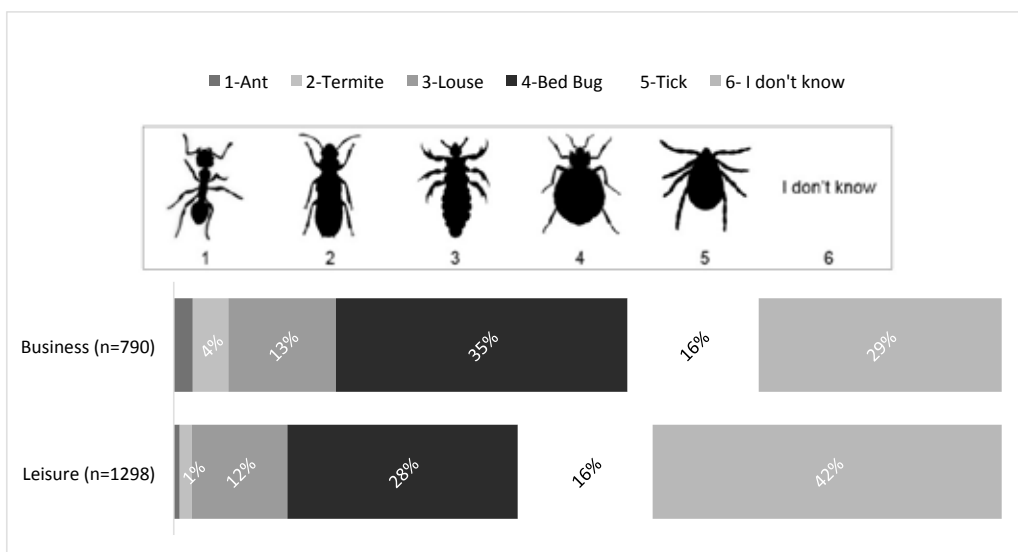


Figure 1. Percentage of respondents (by business and leisure travelers) who identified various arthropod outlines as those of bed bugs.

Travelers were also asked about their level of prior experience with bed bugs. In general, most respondents said they knew about bed bugs via news outlets, but had no personal experience (44% for business, 56%, for leisure). However, business travelers were more likely than leisure travelers ($P = 0.04$) to have had personal experience or know someone having personal experience with bed bugs (35% and 21% respectively). Roughly one in five respondents (both business and leisure) mentioned they “haven’t really seen or heard much” about bed bugs, suggesting a further need for public education.

We further asked respondents to rate whether they worry about bed bugs while staying in hotels. The majority said they thought about bed bugs while staying in hotels, but were not worried (35%), or only briefly worried about them (29%). About one in five respondents (21%) never thought about bed bugs or considered them a concern while traveling, while 14% worried about them often. Not surprisingly, those who reported finding bed bugs in a publicly-posted hotel review or on social media (12% and 2% of business and leisure respondents, respectively), were significantly more likely to have a greater level of worry, as were those who reported more prior personal experience with bed bugs ($P < 0.01$). In general, leisure travelers appeared more worried about bed bugs than business travelers despite business travelers spending more nights and money in a hotel. Females were 5% more likely to often worry about bed bugs than males. Additionally, married females with children have an 11.8% higher chance of reporting greater levels of bed bug worry while traveling than single and childless females. While females are 48.4% of the sample, 65.1% say they are primarily responsible for choosing and booking hotels for leisure purposes; therefore, hotels should be mindful of their potential vulnerability to females who generally worry more about bed bugs and who often make the booking decisions.

Reaction to Bed Bugs in Online Reviews

The majority of travelers today consider online reviews when booking hotel accommodations. In one survey of global respondents, TripAdvisor found that 80% of travelers read at least 6-12 online reviews before selecting a hotel on their site (PhoCusWright, 2013). Other studies concluded that customer reviews are the most important factor in hotel booking decisions and that online reviews and reputation management are the most important issues of the industry (Ady and Quadri-Felitti, 2014; Deloitte, 2015; PhoCusWright, 2013).

Given the importance of online reviews for hotels, we wanted to know how booking decisions would be influenced by reports of bed bugs. Respondents were presented with the following scenario: “You’re about to make a reservation for a certain hotel, but you read an online review posted in the last month that says they found bed bugs in their hotel room.” Travelers then ranked four responses in terms of most to least likely to pursue each: 1) choose the hotel, but be careful to inspect the room, 2) avoid that particular hotel, 3) avoid that entire brand of hotel or 4) reduce the number of hotel nights and overnight trips taken (Figure 2). Tellingly, more than half of all respondents (60% traveling for leisure, 51% for business) said they would be very unlikely to choose a hotel with a *single online report of bed bugs*. The most frequently chosen second course of action (33% of respondents) was to not select that brand of hotel, suggesting loyalty to an entire brand can be harmed by reviews posted about a single property.

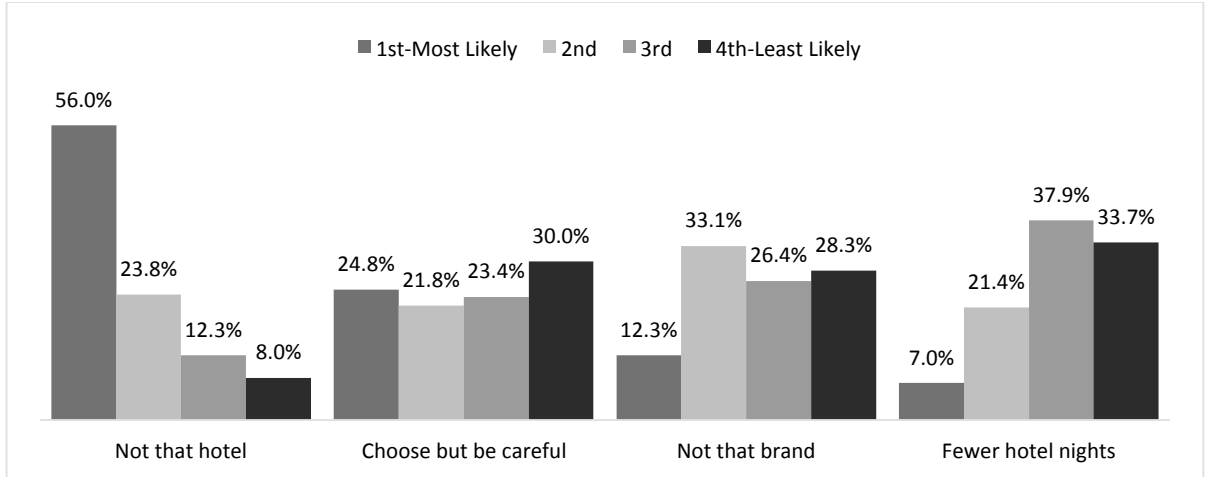


Figure 2. Respondents’ overall reaction to an online report of bed bugs, and how it would influence their choice of accommodations.

Reaction to Finding Bed Bugs in Hotel Rooms

We also wanted to assess how travelers would respond to finding bed bugs compared to other problematic issues in hotel rooms. Respondents were first asked if they normally check for abnormalities such as an unclean bathroom, odor, linen stains, or signs of bed bugs before settling into their room. A majority of respondents indicated they check for cleanliness of the bathroom (80%), the absence of room odor (72%), and clean sheets and towels (62%). Conversely, only 34% reported searching for signs of bed bugs. Travelers were then asked how they would respond to finding such problems during their stay. For each room issue, they were asked to choose their most likely response from the following options: 1) do nothing, 2) report it to the front desk, 3) request a new room, or 4) switch hotels entirely with a full refund (Figure 3). In most scenarios, traveler responses mainly involved contacting the front desk and/or requesting a new room. Finding signs of bed bugs, however, elicited a more extreme response, with 60% of travelers stating they would leave the hotel and demand a refund. Business travelers showed slightly more leniency toward finding bed bugs than leisure travelers, with 55% indicating they would change hotels versus 63% of leisure travelers. Leisure and business travelers’ reactions to other hotel room issues tended to be more similar. Clearly, consumers are more intolerant of bed bugs than other room deficiencies. Hotels should be cognizant of this fact when responding to complaints, real or perceived.

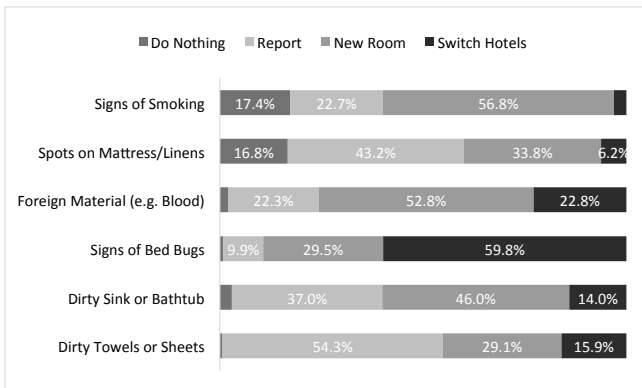


Figure 3. How respondents would deal with hotel room issues, including signs of bed bugs.

In a related question, travelers were asked specifically how they would respond to finding a live bed bug in the room during their stay. Respondents were given the option to select the three most and least likely outcomes they would pursue. Most respondents chose “switching rooms with compensation” (74%) or “leaving the hotel” (73%) as their top two picks. Fewer travelers (38%) said that they would leave and avoid future bookings with that hotel brand entirely. Relative to online reviews, 47% of respondents said that if they found a bed bug in their hotel room they would “report it and post about the experience on social media.” Taking legal action against the hotel was the least likely option chosen (9%), suggesting that if hotels offered some form of modest compensation many guests would be content.

Duty to Disclose Infestations

Travelers were also interviewed on whether they thought hotels had a duty to warn guests of previous bed bug problems. When asked, “Do you think hotels should be required to tell guests if their assigned hotel room has ever had a prior problem with bed bugs?” the majority of respondents (80%) agreed. Among those who wanted mandatory disclosure of previous bed bug issues, we also asked them how far back in time (i.e. length of time) they would want to know of such occurrences (Figure 4). About two-thirds of leisure travelers wanted to know if there had been bed bugs in the room at some point in the past year, and the remaining third wanted to know if there had been an occurrence *ever*. Leisure respondents were more likely to want longer lengths of disclosure, with 32% wanting “any occurrence ever” disclosed, compared to 21% of business travelers. Business travelers tended to be more lenient ($P = 0.02$), with 48% wanting to know of any occurrences in the past 3 months or less, versus 38% of leisure travelers.



Figure 4. How far back in time respondents wanted to know if there were bed bugs in their hotel room.

Mandated disclosure of a property’s bed bug history is becoming an important and contentious issue in the rental of apartments, with some cities requiring disclosure to prospective tenants (California Assembly, 2016; New York City Administrative Code, 2010). If similar legislation was passed requiring bed bug disclosure in hotels, the consequences could be far-reaching. Such a ruling could potentially take rooms out of service for prolonged periods, possibly long after the threat to guests has diminished. It could also necessitate maintaining and sharing infestation records with some customers, a troubling prospect for the hotel industry. While informing guests about past infestations may seem unnecessary to hoteliers, there is presently no way to be certain that a formerly infested room is now bed bug-free.

CONCLUSIONS

This is the first U.S. study to survey attitudes of travelers toward bed bugs. The findings have important implications for the public, hoteliers, and pest managers who service these accounts. While the majority of consumers have limited understanding or first-hand experience, the pests evoke fervent responses by both business and leisure travelers. Compared to other hotel room issues such as odor or lack of cleanliness, evidence of bed bugs is more likely to cause guests to switch hotels and seek compensation. When booking accommodations online, the majority of business and leisure travelers stated that a single report of bed bugs would cause them to choose another hotel. More than half of all respondents wanted to know if their assigned room had a previous bed bug issue, even if it occurred long ago.

Widespread reliance on social media and online reviews when booking accommodations makes hotels especially vulnerable to reports of infestation. Our findings indicate that a single online report of bed bugs adversely impacts future bookings, irrespective of whether the review is accurate. Hotels and others in the hospitality sector should develop a reputation management plan to prudently respond to such comments. Similarly important is training front desk/customer service employees to respond promptly and empathetically when incidents arise. Hotels should also train their housekeeping and engineering staffs to recognize and report bed bugs in the earliest possible stages when infestations are more manageable.

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