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## Unsafe waste management practices and hepatitis C among hospital sanitary staff in Pakistan



Sir,

Healthcare providers face occupational health risks through contact with patients, both directly and indirectly via hospital waste. The occupational risk for healthcare staff in developing countries is much higher owing to factors such as illiteracy, resource constraints, poor waste management practices, etc. [1]. Although various studies have been undertaken to determine the risk factors associated with infectious diseases among hospital paramedic staff in developing countries, similar studies on the staff of hospital facilities departments are few in such countries. These staff include sanitary staff, whose main responsibility is the collection,

transportation and storage of hazardous as well as non-hazardous wastes. We aimed to determine the prevalence and risk factors for hepatitis C virus (HCV) among hospital sanitary staff in Gujranwala, a major city in Pakistan. The city had a population exceeding 4.7 million across four urban townships, and was the fastest growing city in Pakistan at the time of the study [2]. The city faced a shortage of public healthcare infrastructure, and only had one public hospital. In addition, there were 35 private hospitals, comprising five large trust or charity hospitals (75–250 beds) and 30 smaller for-profit hospitals (seven to 55 beds).

We undertook blood testing for anti-HCV antibodies amongst sanitary staff in the public hospital and in nine private hospitals (four trust hospitals and five for-profit hospitals). In all, 132 subjects volunteered for testing out of a total population of 206. The number of tested subjects varied from one to 10 at the for-profit hospitals, from six to 23 at the trust hospitals, and totalled 52 at the public hospital. Informed consent was obtained from all participants, and relevant permissions were also obtained from the management at each hospital. A questionnaire was designed to gather information about 10 socio-demographic variables and 15 risk factors associated with the spread of HCV [3,4]. The results were analysed using SPSS v.21 (IBM Corp., Armonk, NY, USA).

The overall prevalence of HCV among the surveyed sanitary staff was 13.6%, which was much greater than that for the general public in Gujranwala (6.5%) [5]. The prevalence rates across public, trust and for-profit hospitals were 13.46%, 10.52% and 21.74%, respectively. A history of accidental needlestick injury was found to be the only significant risk factor for HCV seropositivity. The high prevalence of HCV and its associated risk factor are consistent with findings from similar studies in other cities in Pakistan [6]. However, our study adds evidence of considerable variation in HCV seropositivity rates amongst sanitary workers in different hospitals in the same city. Figure 1 displays the prevalence of HCV among subjects across the surveyed hospitals in the four townships of the city.

In light of our findings, we recommend that further investigations should be conducted to discover the root cause of these striking variations in seroprevalence. Moreover, we suggest that hospital sanitary staff should be screened across the country, both for their benefit and as a public health measure. Training and awareness programmes regarding occupational safety and cleanliness should be promoted across the hospitals. The use of personal protective equipment should be made compulsory for hospital sanitary workers. Going forward, researchers need to focus on the impact of poor hospital waste management practices on occupational safety in resource-constrained countries such as Pakistan. Since our study involved hospital sanitary staff alone, the study is limited by the small sample size. The fact that the data were self-reported is another limitation of the study. Nevertheless, the findings reported herein can aid researchers in comparison and benchmarking for future studies. Scavengers collecting unsegregated hospital waste from municipal waste dumping grounds should also be screened to get a holistic picture. This issue has received little attention to date and it needs to be highlighted to avoid future contingencies.

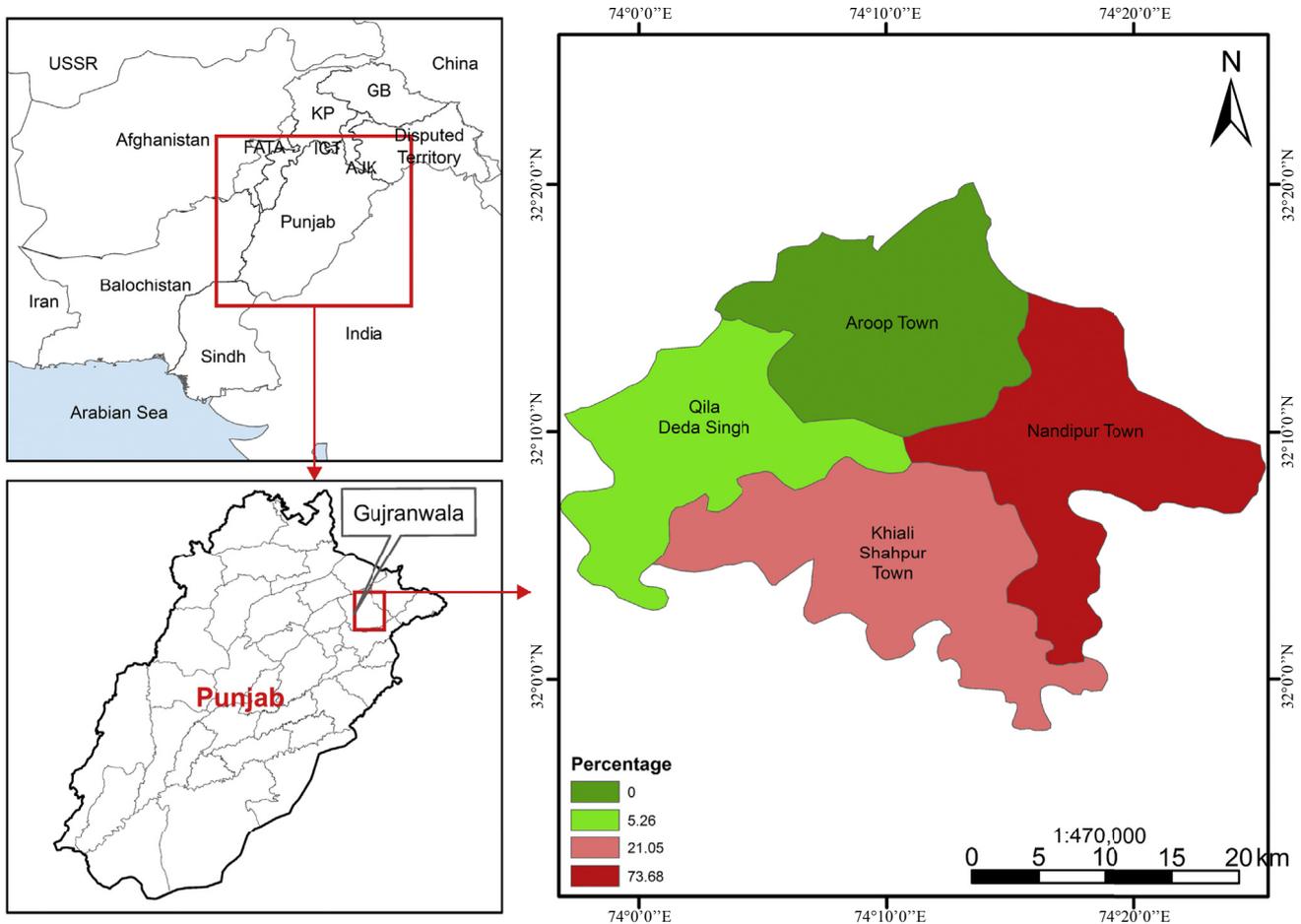


Figure 1. Prevalence of hepatitis C virus in hospitals across the four urban townships in Gujranwala city.

#### Conflict of interest statement

None declared.

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