

Saadi Wiam<sup>1</sup>, Fatmi Ahlam<sup>2</sup>, Kallouche Fethia<sup>1</sup>, Kerras Oumaima<sup>1</sup>, Bettahar Fares<sup>1</sup>

<sup>1</sup>Department of Biology, Faculty of Nature, Life and Earth Sciences, University of Djillali Bounaama, Khemis Miliana 44225, Algeria

<sup>2</sup>Department of Microbiology & Biochemistry, Faculty of Science, University of M'sila, 2800 M'sila Algeria.

## Introduction

Hepatitis, caused by viruses like B and C, poses a global health threat. These viruses can lead to chronic liver diseases and serious complications. Preventive measures and screening are crucial, given the high prevalence rates and associated mortality. In Algeria, hepatitis B and C are significant public health concerns, particularly among those exposed to risk factors like injectable drug use and unsafe medical practices.

## Objectives

The main objective of this study is to deepen understanding of the epidemiological aspects of viral hepatitis B and C in three northern Algerian provinces: Blida, Chlef, and Oran. By thoroughly examining these diseases, we aim to identify various risk factors contributing to their spread and assess potential outlooks within the studied population. By gathering this information, we hope to contribute to better management of these infections, focusing on prevention, early detection, and tailored control measures suited to local realities.

## Materials and Methods

### 1. Study Area

The study was carried out in three provinces located in northern Algeria: Chlef, Oran, and Blida (Figure 01). Encompassing these regions provides a comprehensive geographical scope, enhancing our insight into the epidemiological landscape of hepatitis B virus (HBV) and C (HCV) across diverse populations and settings. Data were obtained from the epidemiology and preventive medicine departments of public hospitals (EPH). This selection was deliberate to utilize the specialized knowledge and infrastructure of these departments, which oversee the surveillance and analysis of infectious diseases, including HBV and HCV.

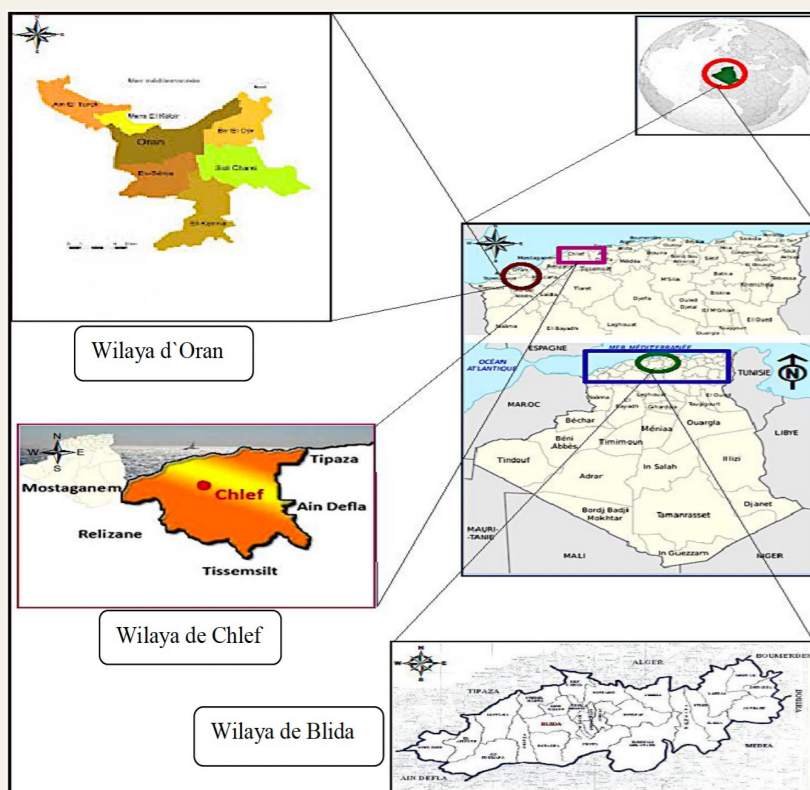


Figure 01: A cartographic representation of the regions studied in Algeria.

### 2. Study Period

This is a retrospective descriptive study conducted over an eight-year period, from January 4, 2015, to December 31, 2022, in the provinces of Chlef and Blida. For the province of Oran, the study period extended from January 9, 2020, to December 31, 2022. The specific selection of years varies depending on the availability of data and resources required to conduct the study in each province.

### 3. Study Population

The study population included all patients with viral hepatitis B and C who were hospitalized and treated in the relevant healthcare facilities. Data on these patients were collected from medical records containing the required information. Including all subjects with viral hepatitis B and C ensures a comprehensive representation of the study population, enabling in-depth analysis of epidemiological characteristics, risk factors, and clinical outcomes associated with these infections.

## 4. Epidemiological Data

In this study, epidemiological data is meticulously collected for each patient with viral hepatitis B or C. Collected information includes hepatitis type (B or C), age, gender, and marital status of each patient. An essential aspect of this data collection is identifying contamination risk factors associated with hepatitis B and C, such as dental care, blood transfusions, dialysis, surgical interventions, unprotected sexual intercourse, El Hidjama practices (an alternative medicine technique involving blood extraction), and intrafamilial transmission. Additionally, we record infection diagnosis and medical care dates for each patient.

## Results

### 1. Distribution of HBV and HCV cases by year

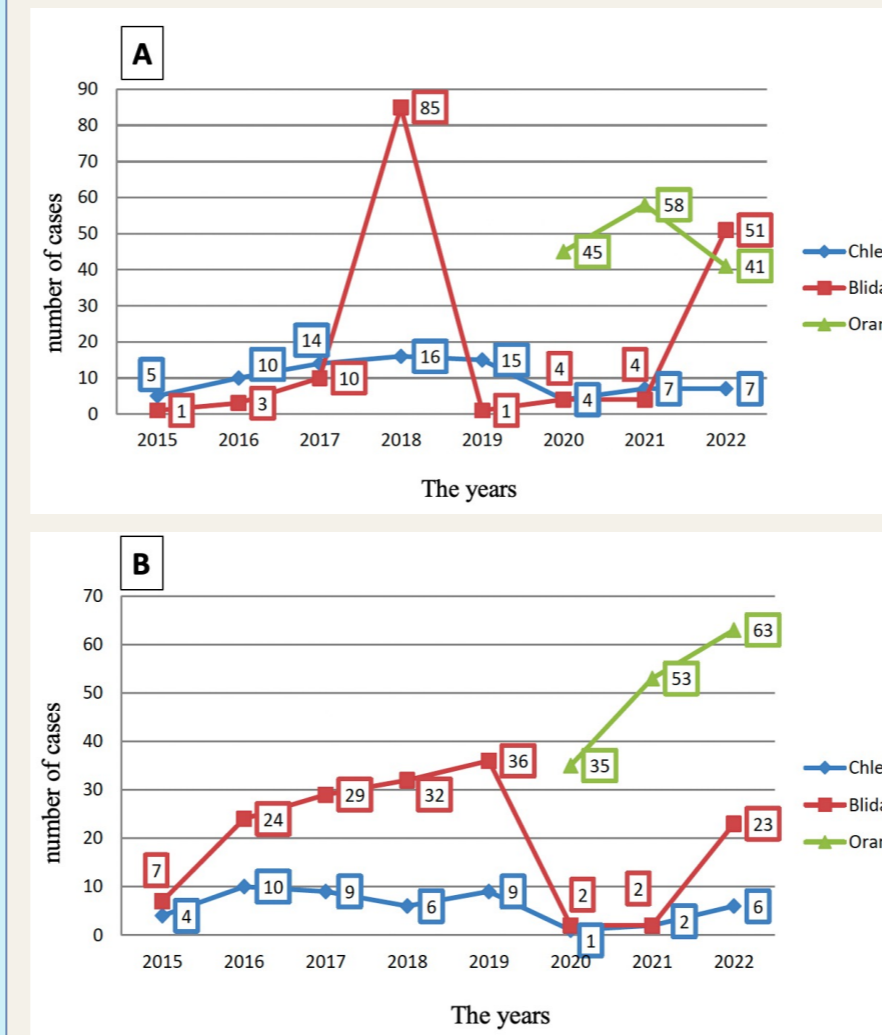


Figure 02: Distribution of HBV (A) and HCV (B) cases according to years of study.

### 2. Distribution of HBV and HCV cases by gender

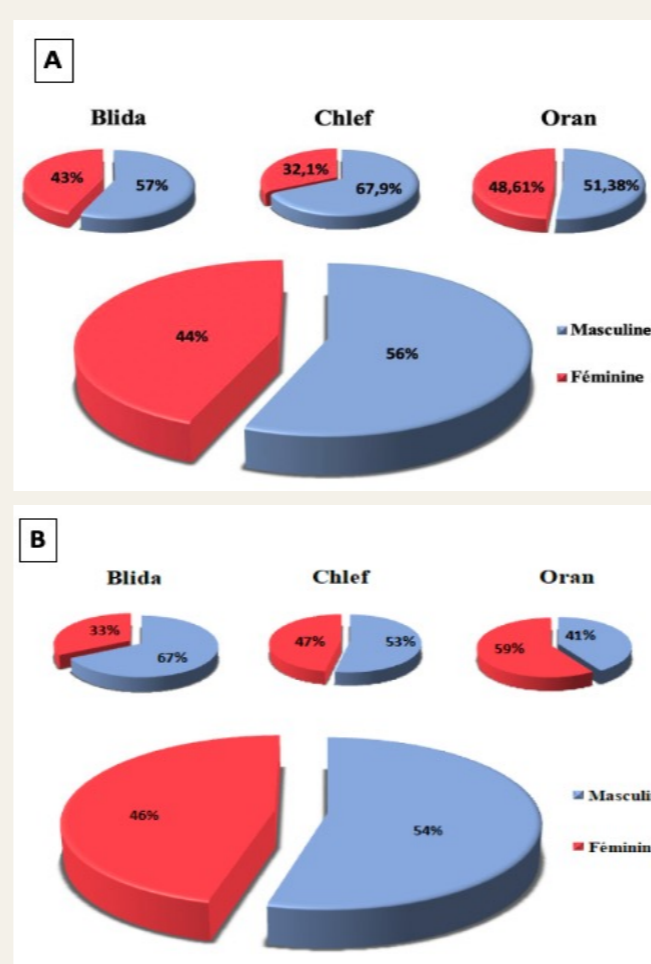


Figure 03: Distribution of HBV (B) and HCV (C) cases by gender.

### 3. Distribution of HBV and HCV cases by age

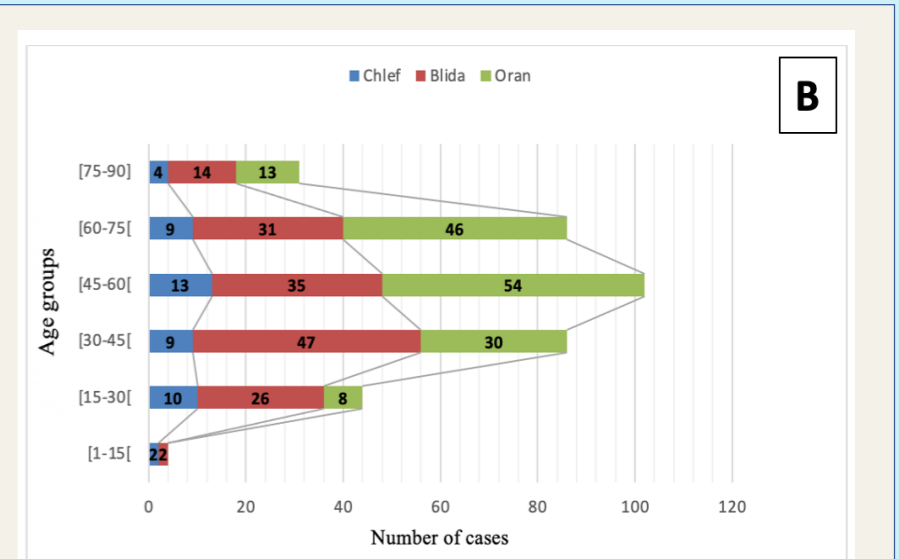
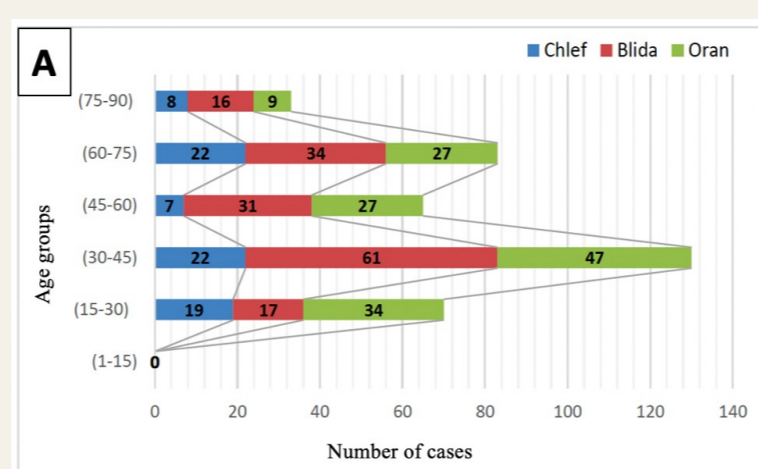


Figure 04: Distribution of HBV (A) and HCV (B) cases by age.

### 4. Distribution of HBV and HCV cases by mode of transmission

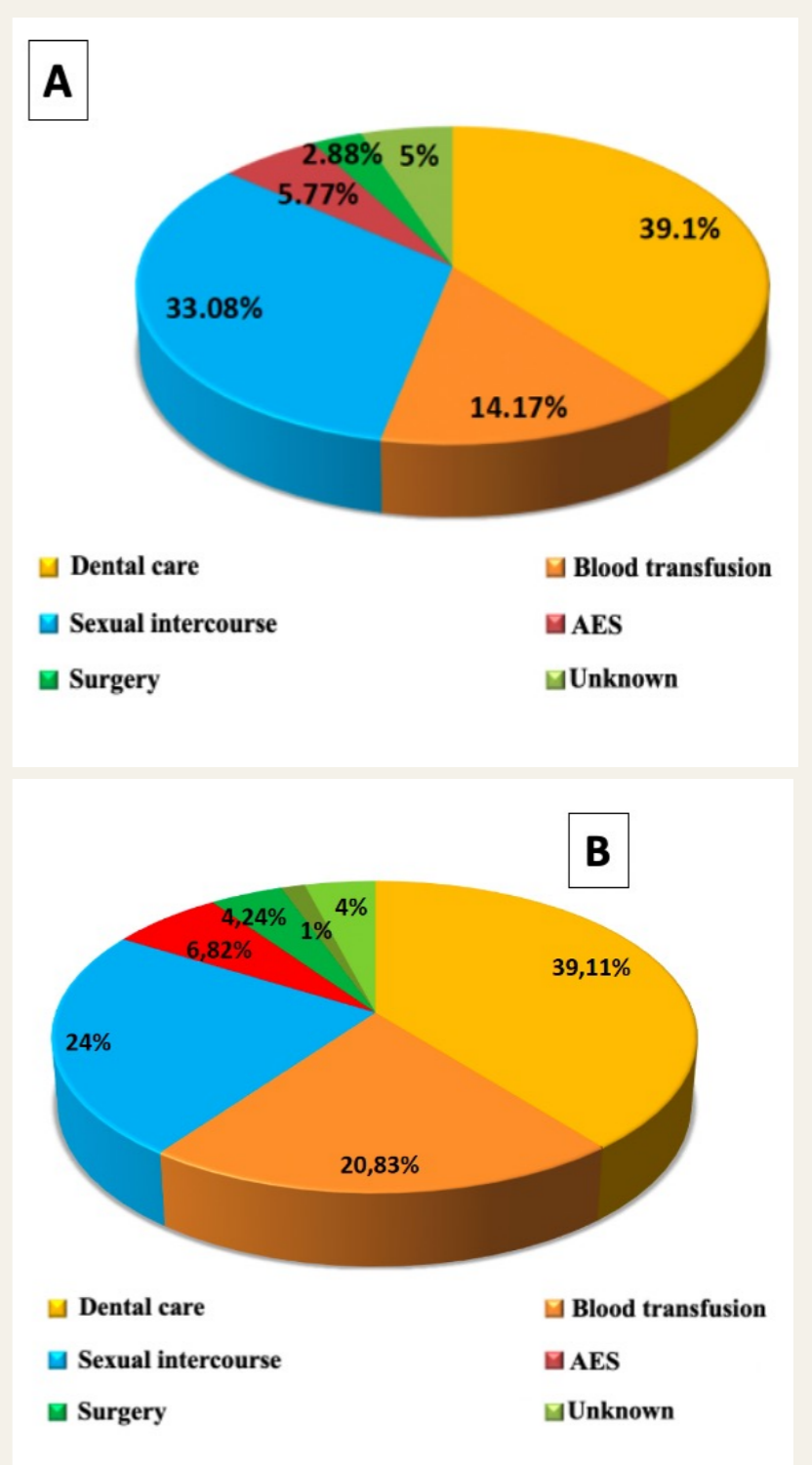


Figure 05: Distribution of HBV (B) and HCV (C) cases by mode of transmission

## Conclusion

Our research aimed to bridge this gap by conducting a retrospective analysis over an eight-year period in Chlef and Blida, and a three-year period in Oran. Our study, conducted in Algeria, aims to address the lack of epidemiological research specifically focused on hepatitis B and C. Using a retrospective descriptive approach over several years in different regions, we analyzed the distribution of HBV and HCV cases along with associated factors like gender, age, and mode of transmission. Variations in incidence between years and regions suggest the impact of prevention practices and healthcare access. Understanding these factors is crucial for tailored prevention strategies. Differences in case distribution by gender, and age highlight the need for targeted prevention and screening efforts. Transmission through various means underscores the importance of strengthening preventive measures. Overall, our findings underscore the importance of ongoing surveillance and the need for region-specific prevention and management strategies to combat hepatitis B and C infections effectively in Algeria.