



Executive Summary


The Population Health Survey (PHS) 2020-22 is the third territory-wide Population Health Survey conducted by the Department of Health (DH). The PHS 2020-22 comprised two parts, namely (I) household survey and (II) health examination. Survey questions and tests for viral hepatitis markers were first included in the PHS 2020-22, covering four, out of the five main hepatitis viruses, namely hepatitis A (HAV), B (HBV), C (HCV), and E (HEV) virus.

HAV and HEV infections predominantly cause acute hepatitis, while a substantial proportion of HBV or HCV cases would develop chronic infection lasting beyond six months. The major disease burden of viral hepatitis comes from the sequelae of chronic HBV or HCV infection, including cirrhosis and primary liver cancer. Chronic infection with HBV or HCV is usually lifelong without treatment, and can be asymptomatic until complications develop. Early diagnosis and treatment with antiviral medication are the mainstay to reduce the morbidity and mortality related to HBV and HCV.

The Hong Kong Viral Hepatitis Action Plan 2020-2024 sets out twelve local indicators, including the prevalence of chronic HBV and HCV infection in the general population, to monitor and evaluate the current actions in reducing the morbidity and mortality due to viral hepatitis, with the ultimate goal of eliminating viral hepatitis as a public health threat in Hong Kong by 2030 in accordance with the World Health Organisation (WHO) target. Measurement of viral hepatitis markers provides information for assessing the disease burden in the community. These include antibodies against HAV, HCV and HEV, hepatitis B surface antigen (HBsAg), hepatitis B envelope antigen (HBeAg), HBV DNA level, and viral load and genotyping of HCV.

The Study

The main objective is to assess the viral hepatitis status of land-based non-institutional population aged 15 – 84 in Hong Kong, excluding foreign domestic helpers and visitors. The fieldwork of the household survey was conducted between 2 November 2020 and 2 January 2022, with temporary suspension between 2 December 2020 and 22 February 2021 due to COVID-19 pandemic. Health examination was conducted between 1 March 2021 and 19 February 2022. Age-gender stratified random subsample of respondents aged between 15 and 84, who were successfully enumerated in the household survey and had signed consent for health examination, were further invited to



undergo health examination. A total of 16 655 individuals aged 15 or above were enumerated in the household interview, 3 757 respondents out of 6 373 consented respondents were randomly selected and invited to make appointment for health examination, including 2 072 respondents who completed blood tests. The survey data were adjusted for the differential participation rates by type of housing and grossed up to control for the age and gender profile of the study population for the second quarter (Q2) of 2021. PHS 2020-22 Part I and Part II Survey Reports, which presented findings on household survey and health examination, were published in December 2022 and April 2023 respectively. The details of survey method and characteristics of the sample could be referred to Chapter 1 of the Part I Report.

Questions from the household interview and the health examination covered various aspects including physical, psychosocial health and health-related lifestyle. Information on self-reported history of viral hepatitis, time of diagnosis, carrier status, antiviral treatments received, as well as complications possibly related to viral hepatitis (cirrhosis, liver cancer) was collected. Blood specimens were tested for viral hepatitis antigens, antibodies, DNA/RNA level as well as genotyping.

Key Findings

Results of household survey

2.4% of persons aged 15 or above reported to have been diagnosed with viral hepatitis by a doctor. Hepatitis B was the most common type in both males (2.1%) and females (2.1%), and the proportion of self-reported doctor-diagnosed viral hepatitis generally increased with age. Among those with doctor-diagnosed hepatitis B, 2.6% were first diagnosed during the 12 months preceding the survey. 76.0% of those with doctor-diagnosed hepatitis B reported themselves as current carriers, whereas 42.8% of those with doctor-diagnosed hepatitis C claimed themselves as ex-carriers. Among the self-reported current hepatitis B carriers, 49.6% did not have any follow-up medical care for their liver diseases, and 24.7% had ever received antiviral therapy from a western medical practitioner. Among those with self-reported chronic hepatitis C, 52.6% had ever received antiviral therapy from a western medical practitioner. Among those who had doctor-diagnosed cirrhosis, the proportion having self-reported doctor-diagnosed hepatitis B and C was 14.2% and 3.8% respectively. Among those who had doctor-diagnosed liver cancer, 23.1% were diagnosed with hepatitis B, while no respondent was diagnosed with hepatitis C, based on self-reported data.

Results of health examination

Hepatitis A

Among health examination participants aged 15 – 84, 58.7% were positive for anti-HAV. The proportion of positive results generally increased with age, from 30.9% among those aged 15 – 24 to 95.1% among those aged 65 – 84. Prevalence was higher in females than males in all age groups. Only 5.7% of participants reported having received hepatitis A vaccination.

Hepatitis B

Among participants aged 15 – 84, 6.2% were tested positive for HBsAg. The prevalence peaked at 8.4% among those aged 35 – 54 and decreased to 7.0% among those aged 65 – 84. In younger age groups, the HBsAg prevalence was much lower at 0.3% and 1.5% among those aged 15 – 24 and 25 – 34 respectively. The prevalence in females (6.5%) was slightly higher than that in males (5.8%). Among those tested positive for HBsAg, 4.5% (4.4% for females and 4.6% for males) were tested positive for HBeAg, and the proportion having HBV DNA level $\geq 2\ 000$ IU/mL and $\geq 20\ 000$ IU/mL was 31.8% and 17.3% respectively. Among those tested positive for HBsAg, 72.9% reported having a history of doctor-diagnosed hepatitis B in the household survey and 61.6% reported being current carriers. 70.1% of the participants tested positive for HBsAg did not have any medical follow-up for their liver diseases, whereas 24.8% and 5.0% were having follow-up in public and private sector respectively. 13.5% reported having received antiviral therapy from a western medical practitioner.

Hepatitis C

Among participants aged 15 – 84, 0.32% were tested positive for anti-HCV. The prevalence was similar between females (0.43%) and males (0.20%). The overall prevalence of viremic HCV infection was 0.26% among persons aged 15 – 84. Among persons tested positive for HCV RNA, the majority (59.2%) were infected by HCV genotype 1b. The viral load ranged from 523 000 IU/mL to 6 150 000 IU/mL. None of the respondents having viremic HCV infection was aware of their infection status.

Hepatitis E

Among participants aged 15 – 84, 5.5% (5.2% for females and 5.9% for males) were tested positive for anti-HEV, while 4.5% was tested borderline for anti-HEV (4.2% for females and 4.8% for males). The prevalence of anti-HEV positive cases generally increased with age, from 1.9% for those aged 15 – 24 to 7.7% for those aged 45 – 84.

Conclusion

This survey gauged an HBsAg prevalence among land-based non-institutional population aged 15 - 84 in Hong Kong, excluding foreign domestic helpers and visitors, at 6.2%, suggesting a further reduction of the prevalence of HBV infection following the implementation of universal childhood immunisation programme and other interventions preventing mother-to-child transmission of HBV in the 1980s. This survey also shed light on the local continuum of care for chronic viral hepatitis, where an increasing proportion of HBsAg-positive participants knew their current HBV carrier status but with a substantial proportion remained unlinked to medical follow-up for their liver diseases. On the other hand, prevalence of anti-HCV found in the survey at 0.32% was largely consistent with the findings in previous local seroprevalence studies over an extended period, suggesting a consistently low prevalence of HCV infection in the general population of Hong Kong in the past few decades. However, the majority of anti-HCV-positive cases in the survey were also tested positive for HCV RNA, giving a prevalence of viremic HCV infection at 0.26%. The unawareness of their viremic infection status posed a challenge in timely linkage to HCV care and treatment among population with unknown risk of HCV infection.

The PHS 2020-22 has provided important epidemiological information of viral hepatitis among the general population and up-to-date information for estimating prevalence of chronic infections and monitoring trend in populations without apparent risk of infection. Continual and regular monitoring through measurement of the local indicators is important to gauge the progress towards the WHO targets. The results show that further work on strengthening surveillance, as well as enhancing diagnosis and treatment coverage, is needed.