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Prevalence of seroconversion of COVID-19 among healthcare worker in Hospital Queen Elizabeth II

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Introduction

Health care workers (HCW) are at high risk of contracting the novel coronavirus disease 2019 (COVID-19) with reported infection rates between 1.1 to 4%^{1,2}. We aim to determine the COVID-19 seroconversion rate using HEALGEN COVID-19 Immunoglobulin G and M (IgG/ IgM) rapid tests among HCW in Hospital Queen Elizabeth II (HQEII), Sabah.

Methods & Materials

Cross-sectional study using convenience sampling. All HCW who underwent screening for COVID-19 via Reverse Transcription Polymerase Chain Reaction (RT-PCR) in HQE II between 24 April to 3 July 2020 were approached for recruitment. Agreeable subjects were given a questionnaire to answer and underwent the antibody rapid test before the scheduled RT-PCR test.





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Result (cont)

Out of 727, there were 1.1% (n=8) HCWs tested positive via IgG or RT-PCR. There were 0.7%(n=5) tested Ig G positive, 0.3% (n=2) tested RT-PCR positive, 0.1% (n=1) tested positive of IgG and RT-PCR. Non were IgM Positive (Table 2)

 Table 2 : <u>Result of Covid-19 RT-PCR and seroconversion</u>

 result among HCWs in HQE II

Test	RT-PCR positive	RT-PCR negative
lgM/lgG positive	1	5
lgM/lgG negative	2	719

None of the HCWs who tested IgG or RT-PCR positive have history of travel for past 2 months. Of the eight positive cases, one head anosmia while other were asymptomatic

Table 3 : Result of COVID-19 RT-PCR and RTK IgG result

Result

Total 727 HWCs were recruited in Hospital Queen Elizabeth II.

Table 1. Descriptive statistics of demographicvariables

Variables	Mean (SD) n (%)		
Age (yrs)	32.5 (6.99)		
Female subject	518 (72.3%)		
Occupation			
Nurses	337 (46.4%)		
Doctor	196 (27.0%)		
Others allied	146		
Health	(20.0%)		
Medical			
Assistant	33(4.5%)		
Pharmacist	15(2.1%)		

Out of 727 HCWs recruited, 165 HCWs had similar clinical symptom of COVID-19 and only one healthcare worker who had symptom insomnia tested IgG and RT-PCR positive. There were Four HCWs had history contacted patient with COVID-19 during work.

based on the profession				
profession	lgG Positive	RT-PCR positive	IgG & RT-PCR positive	
Nurses	2	1	0	
Doctors	1	0	0	
Physiotherapist	1	0	0	
Driver	0	0	1	
Support staff	1	1	0	
Total	5	2	1	

None of the HCWs who tested IgG or RT-PCR positive have history of travel for past 2 months. Of the eight positive cases, one head anosmia while other were asymptomatic

Discussion and Conclusion

Our study showed, low COVID-19 seroconversion rate among HCWs who did not exhibit typical symptoms of COVID-19. These findings support the need to continually adhere to preventive measures already in place such as social distancing, avoiding crowded areas, and adequate personal protective equipment especially within the healthcare setting to prevent further outbreaks.

Reference:

- Reusken, C. B. *et al.* Rapid assessment of regional SARS-CoV-2 community transmission through a convenience sample of healthcare workers , the Netherlands , March 2020. 6–9 (2020).
- Lai, X. *et al.* Coronavirus Disease 2019 (COVID-2019) Infection Among Health Care Workers and Implications for Prevention Measures in a Tertiary Hospital in Wuhan, China. **2019**, 1–12 (2020).