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ABSTRACT

Prevalence of Asymptomatic Pharyngeal Carriage of *Streptococcus pyogenes* and Associated Factors Among School Children in the South-West Bank, Palestine: A Cross-Sectional Pilot Study

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Background: *Streptococcus pyogenes* (GAS), a gram-positive coccus, poses a significant public health burden due to its diverse spectrum of infections, ranging from mild pharyngitis ("strep throat") to severe invasive diseases like necrotizing fasciitis and toxic shock syndrome. Asymptomatic pharyngeal carriage, particularly prevalent among children, plays a crucial role in GAS transmission and outbreaks.

Objectives: This study aimed to investigate the prevalence of asymptomatic GAS carriage and associated factors among school children in the South-West Bank of Palestine, a region characterized by socioeconomic challenges and potential disparities in healthcare access.

Methods: A cross-sectional Pilot study was conducted in seven schools across the Hebron and Bethlehem governorates of the South- West Bank. Fifty school children aged 5-12 years, without clinical symptoms of pharyngitis, were conveniently sampled from seven schools. Throat swabs were collected, followed by analysis using rapid antigen detection test (RADT) for immediate results and subsequent culture

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confirmation for definitive diagnosis. Sociodemographic data, including age, gender, and socioeconomic status based on parental income, were also collected.

Results: Rapid antigen tests identified 14% (7/50) of children as positive for asymptomatic GAS carriage. Culture confirmation lowered this to 12% (6/50). No significant differences based on age, gender, or location were found. However, trends mirrored global patterns: slightly higher rates in younger children (5-6 years) and potentially within lower socioeconomic groups.

Conclusion: This pilot study found asymptomatic GAS carriage among West Bank schoolchildren aligns with global estimates. Age and socioeconomic factors may influence carriage, but larger studies are needed for firm conclusions. Public health interventions promoting hygiene, particularly in disadvantaged areas, are crucial to mitigate GAS transmission risk.

Keywords: Streptococcus pyogenes, asymptomatic carriage, school children, Palestine, socioeconomic factors, public health.