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## **Access to water source and morbidity in children in the occupied Palestinian territory, 2000–14: a repeated cross-sectional study**

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**Background** Water insecurity is an important risk factor for disease. In recent years, Palestinians have seen access to drinking water increasingly restricted. This study aimed to describe such changes over time and examine the association between drinking water sources and the health of children younger than 5 years in the occupied Palestinian territory in 2000–14.

**Methods** A repeated cross-sectional study used data from five Demographic and Health Surveys conducted between 2000 and 2014. Change over time was quantified by comparison between the first (n=6155) and final survey (n=7893). For regression analysis, data were aggregated by year, locality (urban vs rural vs camp), and governorate area (n=218). Multiple regression models were applied to examine associations between access to improved drinking water sources (according to Joint Monitoring Programme definitions) and the prevalence of diarrhoea and stunting. Ethical approval was obtained from Al-Najah University and London School of Hygiene & Tropical Medicine.

**Findings** Children's access to an improved water source decreased from 98% in 2000 to 11% in 2014 in the Gaza Strip, whereas it remained stable in the West Bank (94% in 2000 to 94% in 2014). The prevalence of diarrhoea increased in both areas (7% in 2000 to 11% in 2014 in the Gaza Strip; 6% in 2000 to 11% in 2014 in the West Bank), whereas the prevalence of stunting decreased in both (12% in 2000 to 8% in 2014 in the Gaza Strip; 11% in 2000 to 8% in 2014 in the West Bank). Pooled analysis adjusted for socioeconomic status and survey year suggested that prevalence of diarrhoea decreased in areas by 6% (95% CI –12% to 0%) for every 1% increase in the use of an improved water source in the Gaza Strip. This was not the case in the West Bank.

**Interpretation** Limited access to improved water sources was associated with higher prevalence of diarrhoea in the Gaza Strip between 2000 and 2014. Our results suggest policies to increase access to improved water sources should remain a priority in the Gaza Strip.

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**Contributors** HL and AM developed study design. AS, GS, and HL secured data access. The data analysis was mainly done by HL. All authors were involved in drafting the Abstract. All authors have seen and approved the final version of the Abstract for publication.

**Declaration of interests** We declare no competing interests.