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KNOWLEDGE, ATTITUDES AND PRACTICES OF PALESTINIAN PHARMACISTS TOWARDS PROTON PUMP INHIBITORS: A CROSS-SECTIONAL STUDY

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Abstract

Background: Proton pump inhibitors (PPIs) are widely used for managing acid-related gastrointestinal disorders such as gastroesophageal reflux disease (GERD) and peptic ulcer disease. Although PPIs are effective and generally safe for short-term use, their prolonged and inappropriate use has been associated with adverse outcomes, including nutrient deficiencies, infections, and kidney disease.

Objectives: This study aimed to assess the knowledge, attitudes, and practices of Palestinian community pharmacists regarding the use of PPIs.

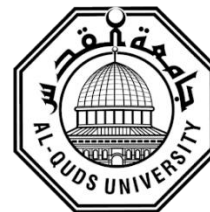
Methods: A cross-sectional study was conducted between December 2025 and March 2026 using a self-administered online questionnaire distributed among community pharmacists in Palestine. The survey consisted of four sections: sociodemographic information; pharmacists' knowledge of PPIs (including general knowledge, side effects, and drug–drug interactions); attitudes toward PPIs; and dispensing practices. Data were analyzed using SPSS version 25. Linear regression was used to identify predictors of knowledge domains and attitudes.

Results: A total of 200 community pharmacists participated, of whom 76% were female. The overall knowledge level was moderate (mean = 60.6 ± 13.1). Pharmacists demonstrated moderate general knowledge (mean = 65.8 ± 13.5), with a strong understanding of classification and administration, but notable gaps in clinical protocols and appropriate use. Knowledge of both short-term and long-term adverse effects was low (mean = 48.3 ± 27.7 and 45.8 ± 25.5 , respectively). Geographic location was significantly associated with knowledge of short-term PPI use ($p < 0.05$). Knowledge of drug–drug interactions was higher (mean = 70.1 ± 20.3). Participants showed a generally positive attitude toward PPI use (79.1%), with female pharmacists demonstrating significantly higher attitude scores ($p < 0.05$). Most pharmacists reported good dispensing practices, with 80.8% indicating that they dispense PPIs over the counter at a 20 mg dose.

Conclusions: Community pharmacists demonstrated moderate overall knowledge of PPIs, alongside positive attitudes and generally appropriate dispensing practices. However, gaps in knowledge—



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particularly regarding adverse effects—highlight the need for targeted educational interventions for both healthcare professionals and the public.

Keywords: Proton pump inhibitors; PPIs; Knowledge; Attitudes; Community pharmacists; Practices; Gastroesophageal reflux disease.