DOI 10.36074/grail-of-science.21.02.2025.172

EDUCATIONAL PLAN FOR PHARMACOGENETICS IN DEVELOPING COUNTRIES

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Pharmacogenetics and pharmacogenomics (PGx) explore genetic polymorphism among individuals, influencing drug transport and metabolism and ultimately affecting drug response. This process involves identifying biomarkers that encode metabolizing enzymes and membrane transporter proteins, allowing for the prediction of treatment efficacy and drug toxicity [6]. Organizations like the Clinical Pharmacogenetics Implementation Consortium (CPIC) and the Dutch Pharmacogenetics Working Group (DPWG) offer guidelines for selecting or adjusting medications based on an individual's genetic profile [1].

According to a report from international groups of experts at the World Health Organization (WHO), financial barriers, and the high investment required by the pharmaceutical industry for drug innovation (more than precision therapy) are two important factors affecting access to PGx in healthcare settings [3]. Moreover, a review of articles has shown that a lack of adequate PGx knowledge, confidence, and awareness among healthcare professionals remains a key barrier to its implementation in clinical practice [5]. Lack of appropriate technology for genomic testing, research, and randomized controlled trials (RCTs), data protection, and privacy legislation, educated healthcare professionals (HCPs), and patients have been considered important barriers to PGx implementation in low- and middle-income countries (LMICs). A study assessing the adoption of PGx among Brazilian

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psychiatrists revealed a gap in PGx education and the ability to interpret the analyses. [2]. The cost of training to promote PGx testing among patients and equip professionals with the skills to interpret results remains a major challenge in these countries. [1].

Limited access to the internet and electronic educational courses, along with language barriers for international programs, pose significant challenges in LMICs. To overcome this, designing a basic yet comprehensive educational curriculum and offering advanced postgraduate PGx guidelines training through workshops and seminars is essential. Additionally, at a higher level, assessing the knowledge of medical specialists regarding PGx guidelines in relation to their specialties is necessary. Therefore, institutional investment to enhance the knowledge and attitudes of HCPs is crucial [8]. However, Roses [7] believes that more knowledge related to testing, as well as the growing popularity of PGx in the healthcare context, may reduce the cost of repetitive genotyping. Public education and consultation addressing genetics, genetic technology, genetic testing, its appropriate utility, adverse drug reactions, and variable drug efficacy appear to be important [3, 4].

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ОСВІТНІЙ ПЛАН З ФАРМАКОГЕНЕТИКИ В КРАЇНАХ, ЩО РОЗВИВАЮТЬСЯ

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