

Drug Storage Practices in Libyan community Pharmacies Coinciding with the Circumstances of Recurrent Electricity Blackouts

Ahmed Atia^{1*}, Nisrin Amabrouk²

¹Department of Anesthesia and Intensive Care, The University of Tripoli, Libya

²Department of Pharmacy, Almhara Institute of Health Profession, Tripoli, Libya

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*For Correspondence

Ahmed Atia, Department of Anesthesia and Intensive Care, The University of Tripoli, Libya.

E-mail: ah.atia@uot.edu.ly

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Owing to the rapid growing of private healthcare sector in many parts of the world, community pharmacy is becoming a main source of healthcare in most of low- and middle-income countries. Community pharmacy serves as the primary source in providing healthcare for the majority of the people in the developing countries ^[1]. The quality of medicine is very crucial due to the increasing incidence of falsified and low-quality medicines globally. Community pharmacies play an axial part in ensuring the quality of pharmaceutical products for the community; nevertheless, the medicines quality cannot be guaranteed if they are not stored or dispensed accurately ^[2].

An important part in the supply of good quality medicines is the proper storage conditions. Drug storage environments distract the post-manufacture quality of medicines and health supplies. Studies show that convenience infrastructure for drug storage that prevent contamination and damage to pharmaceuticals is a main challenge in various countries in Sub-Saharan Africa. A proper storage practices is vital to ensure availability of safe, effective and high-quality medicines for all patients.

Various medicines necessitate diverse storage conditions. Consequently, it is significant to regulator light, heat, and moisture in the setting that may impact remedies. During storage of the pharmaceutical products, precautions must be taken in relation to the effects of the atmosphere, moisture, heat and light. There is obvious evidence that environmental aspects such as humidity and high temperature enhance medicines degradation. For instance, pharmaceuticals on the WHO Essential Drug List (EDL) such as amoxicillin, adrenaline, paracetamol and antimicrobials have been shown to have stability concerns under humid climate circumstances. Gels, ointments and analogous drug preparations deteriorate and become unusable on exposure to extreme heat. Contamination and wastage due to poor stock management are other storage-related problems. This is particularly of concern in countries like Libya, where policies and regulations were not properly followed, which makes patient safety in threat. Although WHO published guidelines for the supply and management of essential medicines, it remains uncertain whether these guidelines are followed in community pharmacies in Libya.

For this purpose, we conducted pilot survey to assess drug storage conditions in public health facilities in Tripoli, Libya. Out of 46 visited pharmacies in November 2020, 82.6% were female and 76% of the visited pharmacists had at least a first degree in pharmacy. About 71.7% of the pharmacists reported that the pharmacy was cleaned daily with 15.2% reporting only a weekly cleaning schedule. About 58.6% of the pharmacist reported direct sunlight penetration and moisture retention in their store rooms during the recurrent electricity blackouts, which is a key concern. Direct penetration of sunlight leads to instability and degradation of medicines that are photosensitive. Also, moisture retention can lead to bacterial contamination, desterilization and degradation of pharmaceutical products.

Despite that the majority (84.7%) of visited pharmacies had an alternative source of electricity during the recurrent blackout, only 15.2% of pharmacies reported the presence of temperature monitoring devices. While most of the visited pharmacist had refrigerators for drug storage; the majority of these were not functional due to the situation of recurrent electricity shutdown.

The lack of electricity and failure to preserve the cold restraint has far reaching negative consequences for medicines in these facilities, given that these pharmaceuticals are probably to be useless when dispensed to patients. These outcomes therefore exhibit the urgent need for support from the government and collaboration with the relevant stakeholders for effective implementation of alternative power sources to provide electric supply, and enforcement of medicines laws. Training is important for enhancing the compliance of community pharmacists toward the law. Awareness programs are also crucial to convey the regulatory standards and the consequences of not following the laws. A regulatory influence assessment to evaluate the practical applicability of the regulation would be supportive in confirming the compliance of pharmacists.

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