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Pharmaceutical Waste Management in Community Pharmacies and Hospitals in the SAARC Region: A Narrative Review

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Background: Pharmaceutical waste is a type of healthcare waste that includes expired, unused, spilled, and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer required and need to be disposed of appropriately. As a result of increasing usage of pharmaceuticals, the accumulation of waste is gradually elevated which causes threat to humans and the environment.

Objectives: To critically analyse the pharmaceutical waste management (PWM) throughout the community, community pharmacies and hospitals in South Asian Association for Regional Cooperation (SAARC) region.

Methods: Research articles were collected and categorized on the stated objective from available sources (PubMed, Google Scholar) using comprehensive literature review. Most appropriate research articles in English from 2000 - 2020, were selected (10 articles from each area) using keywords such as PMW, hospital and community pharmacy waste.

Results: Awareness of World Health Organization recommendations on waste management methods and the impact on environment and health is very low. Most hospitals do not use basic self-protection equipment for handling and categorizing waste management while commonly use incineration for waste disposal since it is an environmentally friendly, affordable method. In Nepal, they follow the take-back system against poor waste management methods. The awareness is low among the healthcare practitioners and most of the community pharmacists are unqualified and unskilled; thus, they follow unacceptable techniques, as hiding sharps, medicines and infectious waste in common waste, burning in open area, and flushing in the toilets. The unwanted, expired medicine accumulation is increasing and it leads to inappropriate waste management practices as the government influence is less favourable.

Conclusions: It needs to balance the poor awareness and practical knowledge with available regulations, low budget and government concerns as the PMW in SAARC region countries is challengeable. The institutional resource personnel can enhance knowledge, attitude to make qualified and skilled healthcare practitioners while government should establish proper guidelines, conduct awareness and training programmes and implement the 'take-back system' to improve the quality of PMW.

Keywords: *Community, Hospital, Pharmaceutical, Waste management*