Review Article

TELEPHARMACY SERVICES IN CONTEMPORARY HEALTHCARE: A REVIEW

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Telepharmacy, a specialized component of telemedicine, delivers pharmaceutical care through telecommunication media to patients who lack direct access to medical practitioners, with particular relevance for remote and rural settings where technology-enabled medication delivery is increasingly critical. This work aims to comprehensively outline telepharmacy organizations and services, describe its end-to-end operational workflow, classify major telepharmacy models, summarize key applications and examples, and situate opportunities and barriers within the Indian telehealth context. Using a structured descriptive approach, the telepharmacy process is delineated from prescription initiation and digitization (e-prescription or high-resolution scanning at remote sites) through pharmacist review using Electronic Health Records to assess dosing accuracy, interactions, allergies, and medication history, followed by technician-led or automated dispensing, remote visual verification via high-definition cameras to ensure accuracy, real-time patient counselling by video/audio covering administration, side effects, storage, and questions, and documentation with potential AI-enabled follow-up and adherence monitoring via wearables or smart devices. Telepharmacy modalities include inpatient remote order-entry review to extend 24/7 hospital coverage, remote dispensing for retail/outpatient/discharge services, IV admixture verification using image-based aseptic workflows, and remote patient counselling for general and specialist care (e.g., diabetes, HIV/AIDS). Reported advantages include improved access, support for social distancing and no-contact care, enhanced patient satisfaction and counselling efficiency, and mitigation of local pharmacist shortages; limitations include heterogeneous regulations and licensure requirements, potential mandates for on-site visits, clinical unsuitability in some cases, communication gaps, affordability constraints, literacy and language barriers, and unresolved legal implications. In India, where rural populations constitute 68% and healthcare resources are often insufficient, telemedicine is broadly accepted but requires government support, training programs, and attention to privacy and patient–clinician rapport. Overall, telepharmacy can replicate core pharmacy functions across distances and strengthen continuity of medication care, but scalable implementation depends on regulatory clarity, infrastructure investment, and user-centered communication strategies.

Keywords: Pharmaceutical care, Telecommunication, Remote, Telemedicine, Electronic Health Records, Automated dispensing.