

Strengthening Dermatological and Infectious Disease Surveillance and Care Delivery in Resource-Limited Settings: Lessons from Nepal

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Introduction

Nepal's healthcare system faces significant challenges in addressing dermatological and infectious diseases, particularly in remote and underserved areas. Conditions such as scabies, fungal infections, eczema, and cutaneous tuberculosis and neglected tropical diseases are prevalent, exacerbated by poverty, stigma, and limited access to specialized care. This study explores the integration of public health strategies- surveillance, mobile healthcare delivery, and community education-to enhance the diagnosis, treatment, and prevention of dermatological and infectious diseases. The hypothesis posits that combining surveillance with targeted interventions can reduce disease burden and strengthen care systems.

Methods

A mixed-methods approach was employed, integrating quantitative and qualitative data. Epidemiological surveillance involved 230 participants representing diverse socio-economic and geographic backgrounds. Prevalence data on dermatological and infectious diseases were collected through clinical examinations and interviews. Concurrently, barriers to care were assessed through focus group discussions with patients, caregivers, and healthcare workers. Interventions included mobile dermatology clinics, public health education campaigns, and the introduction of telemedicine for follow-up care. Statistical analyses evaluated the impact of interventions on access, adherence, and disease outcomes.

Results

The baseline prevalence of skin infections was 38%, with scabies (15%), fungal infections (12%), and eczema (8%) being the most common conditions. Access to care was significantly lower in remote regions, with 70% of respondents reporting inadequate dermatological services. Post-intervention, the prevalence of untreated skin conditions decreased by 35% ($p < 0.01$), with mobile clinics reaching 1,000 individuals and facilitating the treatment of 800 cases. Telemedicine consultations improved follow-up adherence by 45%, while educational campaigns led to a 30% increase in awareness of hygiene practices. Caregivers and healthcare workers highlighted increased community trust and reduced stigma surrounding dermatological conditions.

Conclusions

This study demonstrates that integrating surveillance systems with innovative public health interventions can effectively address dermatological and infectious diseases in resource-limited settings like Nepal. Mobile clinics and telemedicine emerged as cost-effective solutions to bridge healthcare gaps, while education campaigns addressed stigma and improved health-seeking behavior. These findings provide a replicable model for enhancing care delivery and disease prevention in other low-resource contexts globally. This study offers a roadmap for integrating public health and clinical dermatology approaches, highlighting their role in achieving equitable healthcare and addressing the unmet needs of vulnerable populations.

Keywords: Public health, telemedicine, community, resource poor setting.

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