09 MAY 2009

A Cross-Continental Survey: Assessing the Feasibility of a Streptococcus salivarius K12 Probiotic Lozenge for Reducing Streptococcal Pharyngitis in Schoolchildren of Informal Settlements

A, m, i, r, a, E, l, -, S, a, y, e, d, ,, K, a, r, i, m, H, a, s, s, a, n

DOI: https://doi.org/10.5281/zenodo.PENDING_0136

Abstract

Streptococcal pharyngitis remains a substantial public health burden, particularly for children in high-density, resource-limited settings such as informal settlements. Limited access to conventional care underscores the need for accessible preventative strategies. The probiotic strain Streptococcus salivarius K12 has shown potential in reducing the incidence of this condition in previous clinical research. This survey research assessed the feasibility of developing and deploying a Streptococcus salivarius K12 probiotic lozenge to reduce streptococcal pharyngitis incidence among schoolchildren in Nairobi's informal settlements. It evaluated practical considerations, including community acceptability, distribution mechanisms, and logistical barriers. A cross-continental, mixed-methods survey was employed. Structured questionnaires were administered to healthcare workers and community health volunteers in Nairobi. Parallel surveys were distributed to international paediatric health experts and biotechnologists to gather technical and clinical insights. Data were analysed thematically and quantitatively to identify core feasibility factors. Survey responses indicated strong local support for the intervention concept, with 78% of healthcare workers agreeing it would be a valuable tool. Key feasibility challenges included maintaining a cold chain for probiotic viability, ensuring consistent school-based distribution, and securing sustainable funding. Cultural acceptance of the lozenge format

was high, but integrating the regimen into the school day required careful planning. Developing a probiotic lozenge for this context is technically promising but faces significant practical hurdles. Success depends on establishing a reliable supply chain and embedding the intervention within existing school health structures. The concept holds potential merit for reducing disease burden if these challenges are addressed. Future work should prioritise piloting a temperature-stable formulation and co-designing a delivery framework with community stakeholders. Partnerships with local ministries of health and education are essential for sustainable implementation. probiotic, Streptococcus salivarius K12, streptococcal pharyngitis, schoolchildren, informal settlements, feasibility study, public health, Kenya. This survey provides a foundational feasibility assessment for a novel biotechnological intervention aimed at a prevalent childhood infection in a low-resource urban African context, highlighting critical practical barriers and community-informed pathways for development.