P128 CONTEXTUAL APPROACHES TO UNDERSTANDING HIV TESTING AND PREVENTION ENGAGEMENT AMONG URBAN REFUGEE ADOLESCENTS AND YOUTH IN KAMPALA, UGANDA

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Background HIV prevention needs are understudied with urban refugee youth. We explored experiences, preferences and engagement with HIV testing and prevention among urban refugee adolescents and youth in Kampala, Uganda, with a focus on the role of contextual factors in shaping access and uptake.

Methods This qualitative community-based study with urban refugee youth aged 16–24 living in Kampala's informal settlements involved five focus groups (FG), including two with women, two with men, and one with sex workers. We also conducted five in-depth key informant interviews. We conducted thematic analysis informed by Campbell and Cornish's conceptualization of material and symbolic contexts.

Results Refugee youth participants (n=44; mean age: 20.25, SD: 2.19; men: n=17; women: n=27) were from the Democratic Republic of Congo (n=29), Rwanda (n=11), Burundi (n=3), and Sudan (n=1). Participant narratives reflected material, symbolic and relational contexts that shaped HIV testing awareness, preferences and uptake. Material contextual factors that presented barriers to HIV testing and prevention engagement included: transportation costs to clinics, overcrowded living conditions that limited access to private spaces, low literacy, and language barriers. Symbolic contexts that constrained HIV testing engagement included medical mistrust of HIV testing, and inequitable gender norms. Religion emerged as an opportunity to connect with refugee communities and to address conservative religious positions on HIV and sexual health. Relational contexts connected with HIV prevention and testing engagement included linkages with professional support, family, friends, and intimate partners. Many participants suggested the need for mental health support alongside HIV care, particularly for HIV testing.

Conclusion Efforts to increase access and uptake along the HIV testing and prevention cascade can meaningfully engage urban refugee adolescents and youth to develop culturally and contextually relevant services to optimize HIV and sexual health outcomes. Integrated mental health and HIV services may be warranted for urban refugee adolescents and youth.

P130 TACKLING ANTIMICROBIAL RESISTANCE USING BIOINFORMATICS APPROACH IN SUPERBUG NEISSERIA GONORRHOEAE BY TARGETING GLUTAMATE RACEMASE (MURI)

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Background Neisseria gonorrhoeae, a causative agent of gonorrhea, has developed resistance for most of the drugs and hence recently declared as 'Superbug'. Glutamate racemase (MurI)which is considered as an important drug target because it has shown an integral role in bacterial cell wall synthesis. Therefore, there is an intense need for identification of novel drugs for the treatment of gonorrhea.

Methods Based on the amino acid sequence of Neisseria gonorrhoeae MurI(YP_208550; Strain FA1090), a homology model was generated to perform homology modeling based on the PDB BLAST results and their validation based on DOPE score and PDF energy score which was further verified by Verify-3D protocol and Ramachandran Plot.co-crystalized ligand of the template was docked into the modeled MurI structure, after superimposition of template structure and modelled structure. Based on docking score, best pose was selected and receptor-ligand pharmacophore model was generated. Virtual screening of potent inhibitors against the pharmacophore model was performed, best hits were selected based on ADMET profile and further refined.

Results The best homology model generated was selected based on the verify score of 107.93 using Discovery Studio 4.0. Ramachandran plot showed 214 residues (91.8%) fall in most favored region. Quality factor of 84% for the protein models was obtained using ERRAT. Six pharmacophores were generated using best docking pose between D-glutamate and MurI. These were subjected to virtual screening with ZINC database. 2214 hits were filtered by fit value of 1.5 which has resulted in 594 filtered hits. Further refinement done by subjecting these 594 hits to Lipinski and veber filter followed by ADMET, which finally gave 378 hits.

Conclusions The study identifies potential compounds that interact with active site of MurI protein, opening new avenues for the treatment option against multi-drug resistant strains of this pathogen.

P131 CHLAMYDIA TRACHOMATIS INDUCES FERROPTOSIS TO PROMOTE ITS OWN DISSEMINATION BY INHIBITING SLC7A11/GPX4 SIGNALING

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Background Chlamydia trachomatis (C. trachomatis), an obligate intracellular bacterium, exits the host through lysis to reinitiate its life cycle in new hosts. However, the mechanism underlying lytic egress is not well understood.

Methods Propidium iodide staining and lactate dehydrogenase release assays were utilized to evaluate cell death during C. trachomatis infection. Lipid peroxide production, a hallmark of ferroptosis, was evaluated using the lipophilic fluorescent dye C11-BODIPY 581/591. Western blot and was employed for quantifying the ferroptosis-associated factors in the late stage of C. trachomatis infection. Ferroptosis inhibitors ferrostatin-1 and liproxstatin-1 were used to investigate the role of ferroptosis in C. trachomatis infection.

Results We found that lysis of C. trachomatis-infected cells in the late stage of infection did not involve apoptosis/necroptosis but occurred via ferroptosis, a recently described form of programmed cell death. Reduced levels of solute carrier family 7 member 11 (SLC7A11), glutathione, and glutathione peroxidase 4 (GPx4), as well as accumulation of lipid peroxidation products, dysregulated cellular redox homeostasis in the late