PrEParados Model: Developing and Implementing a Community-Engaged Social Network Approach to HIV Prevention

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Extended Abstract

South Florida is the epicenter of the United States' human immunodeficiency virus (HIV) epidemic, with the majority of diagnoses occurring among men.[1] However, awareness of and access to effective HIV prevention strategies including biomedical regimens such as pre-exposure prophylaxis (PrEP) remains too low to maximize their impact.[2] Integrating Community-Based Participatory Research (CBPR) approaches with social network strategies is an impactful way to enhance engagement in HIV services.[3, 4] Further, CBPR centers community voices ty voices so that ideas and results are co-owned. This presentation will detail lessons learned from developing and implementing the *PrEParados Model (Model),* which was developed using iterative CBPR in which community members and community-based staff provided feedback on community needs, ethical considerations, resources, and preferences.

The *PrEParados Model*[5] gathers egocentric, sociocentric, two-mode, and geographical data to examine network composition, PrEP conversations, sexual meeting venues, and drug use among PrEP-eligible men. Participants are recruited through outreach at community events such as recreational sports leagues, health fairs, and cultural events. Those interested in participating are provided information about the modified respondent-driven sampling approach used to recruit their friends as part of their sociocentric friendship network.[6] Upon enrollment participants provide data through interactive platforms including Network Canvas,[7] Survey 123 from the ESRI Suite of Tools,[8] and REDCap.[9]

This presentation, will discuss example visualizations that can be replicated by other teams utilizing the *Model* or an adaptation of this approach (Figure 1). In the egocentric approach, participants provided information about their sexual network members and their relationship characteristics (Figure 1a). Egocentric analyses were used to understand the composition and structural characteristics of sexual networks. Sociocentric methods were employed to collect information from the friendship networks, and to identify key players who may deliver peer-led network interventions. This was done by highlighting complex dynamics such as frequency of past PrEP conversations, sexual orientation, and degree centrality of network members to assess their level of influence (Figure 1b). A two-mode network visualization approach was used to examine the affiliation among respondents with lifetime drug use and sexual meeting venues. Depicted characteristics included sexual orientation, whether the node represents a participant or a social venue/networking platforms, and degree centrality (Figure 1c). This approach was critical to identifying engagement with transmission activities and potential localities for intervention, which was further supported by the geospatial information. Geospatial visualizations used aggregate counts to highlight higher reported zones using polygons to obtain or use drugs, find sexual partners, or have sex with partners (Figure 1e). All network data was processed using R version 4.4.1 with the *tidygraph*, *ggraph*, and *igraph* packages. Geospatial visualizations were created with the ArcGIS Online.

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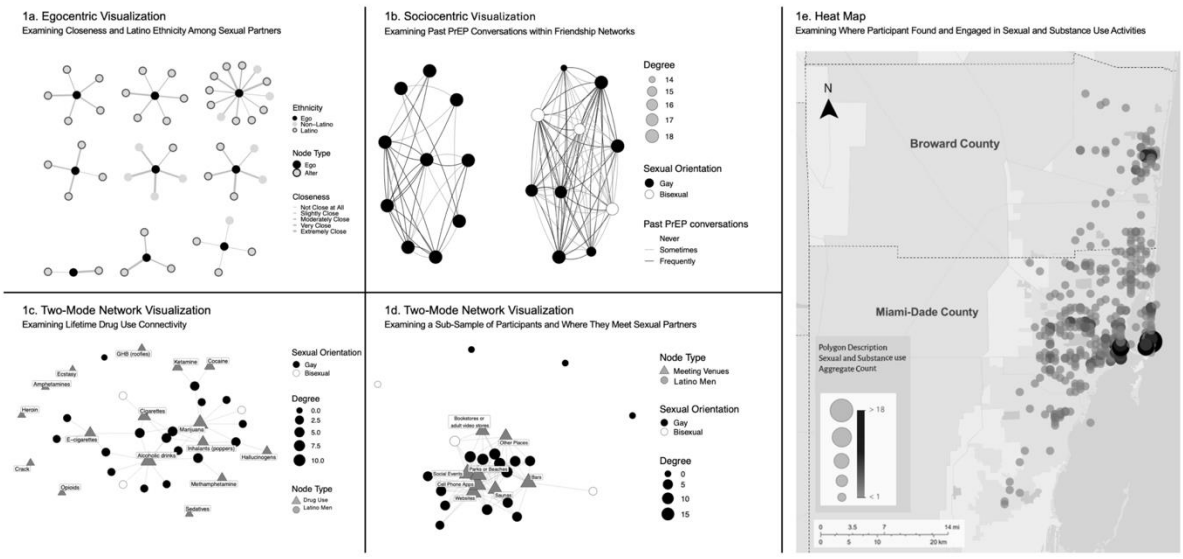

Figure 1. ***Creating Visualizations with the PrEParados Model*.**

Figure 1 depicts examples of visualizations that may be created from data collected utilizing the *PrEParados Model.* Figure 1a is an egocentric network visualization, Figure 1b is a sociocentric network visualization, Figure 1c is a two-mode network visualization, Figure 1d is a two-mode network identifying where people meet sexual partners and Figure 1e is a heat map identifying.