

Introduction The health system of the climatically fragile and geographically inaccessible Indian Sundarbans, West Bengal, is highly dominated by rural medical practitioners (RMPs). Over the years, community-embedded informal RMPs have been responding to the health system crisis by utilising their strong social ties with various health system actors. Understanding the dynamics of their dominance in the rural healthcare market, including their support network, is pertinent to address the health inequities that remain a nascent field of investigation. The present study adopted a social network analysis approach to explore the genesis of social ties of the RMPs with diverse health system actors, and identifies the gaps within the network and the drivers contributing their sustenance over the years.

Methods We applied the Qualitative Ego-network method where data were collected using personal-network research design which constitutes a focal node called 'Ego' i.e. RMP and 'Alters' i.e. the list of people the Ego is directly connected to. We also collected data on nature of ties an Ego exhibits with a specific Alter, and Alter attributes like sex, age and the type of support received. Our qualitative data collection involved the Participatory Network Mapping tool, followed by life histories, in-depth interviews and ethnographic fieldwork. In total 35 participants were purposively selected, applying the maximum variation principle on seven criteria: demographic characteristics (age, sex and education) and service delivery (type of practice and average monthly patients) from two geographic locations (deltaic and non-deltaic) in the Sundarbans.

Qualitative data were analysed following framework analysis in NVivo10, simultaneously supported by analytical concepts of social network analysis. Network measures and visualisations were done using Gephi and UCINET.

Findings In our study, we found three types of significant linkages in RMP network: formal healthcare providers, the healthcare market, and the community. RMPs from deltaic location exhibit large and dense community networks, whereas RMPs from non-deltaic location exhibit relatively denser market linkages. The density is further enumerated by proximity and intimacy by the network members, based on the type of support they receive. Majority of RMPs reported continuous advice and mentoring on the line of treatment and referral over phone or by visiting private qualified providers via healthcare market ties. The RMPs from the remote deltaic locations are strongly linked with specialists from corporate hospitals in the cities. The Private Nursing Home acts as a bridge in developing the network between the RMPs and the specialists. Type of supports provided are knowledge, and suggestions and advice on critical situations. The dense healthcare market ties shows linkages with medicine wholesalers, who act as a medium in developing the connections with pharmaceutical companies. The linkages with the community are the strongest amongst the other two categories. They are embedded within the community: over the years they received blind faith from the islanders, *Panchayat* members, school teachers, and community-based and non-governmental organisations. The presence of a 'structural hole' due to negligible grouping, small and sparse network with the government providers and frontline health workers was a major barrier. We also found possible measures to strengthen the weak ties that exist within RMPs network.

Discussion & recommendations Our study illuminates the social context and structure of RMP networks by understanding the context-embedded healthcare market dynamics. This network comprises of strong and weak social ties that acts as a safety net for RMPs to cope with daily existence stressors. The

PP-04 **A SOCIAL NETWORK ANALYSIS OF RURAL MEDICAL PRACTITIONERS IN THE SUNDARBANS, WEST BENGAL**

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characteristics of these linkages as a whole may be used to interpret the social behaviour within the informal healthcare market. RMPs have the potential to complement formal health system service provision, both in normal times and during health system crises. RMPs' strong linkages with communities and healthcare market ensure their potential role in achieving universal health coverage by working as community health worker. Strengthening of weak ties can act as a catalyst to enhance equitable healthcare service delivery to meet the health needs of the Sundarbans' vulnerable communities. Therefore, it calls for urgent policy level exploration to regularise and integrate RMPs into the health system. This would enable a focus on cost-effective resource mobilisation as a sustainable solutions to address health inequities.

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