

## Virtual medical research mentoring and collaboration: breaking the bounds of nationality during the COVID-19 pandemic

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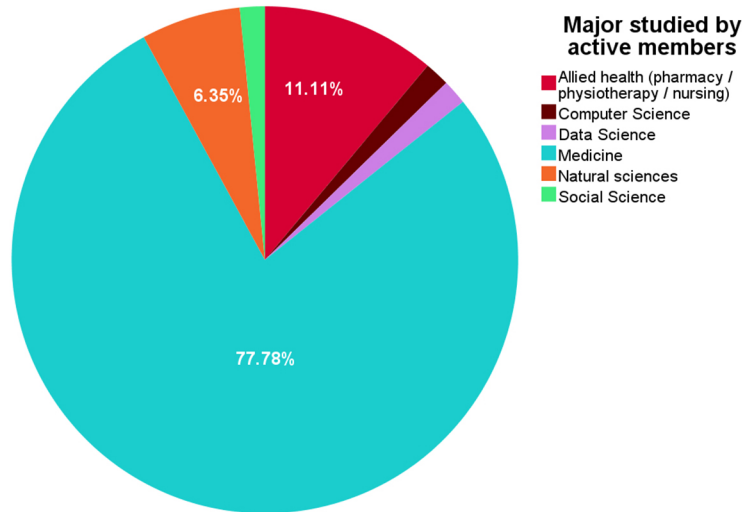
**Background:** Medical research is critical to professional advancement, and mentoring is an important means of early research engagement in medical training. In contrast to international research collaborations, research mentoring programs are often locally limited. With the COVID-19 pandemic causing drifts to virtual classes and conferences, virtual international medical research mentoring may be viable. We hereby describe our experience with a virtual, international mentorship group for cardiovascular research.

**Methods:** Our virtual international research mentorship group has been running since 2015. The group focuses on risk stratification and outcomes research in cardiovascular medicine and epidemiology. Mentees from any country or region in all stages of medical careers are welcomed. Considering the increasing emphasis of contemporary research on multidisciplinary healthcare and translational research, our team also includes allied healthcare professionals or students, and graduates from natural sciences (Figure 1). With our members' diverse backgrounds, we firmly adhere to the principle that all members must be given equal opportunities and treatment, regardless of their age, gender, race, nationality, sexual orientation, family background, and institution of study or practice. We make use of virtual platforms and multi-level mentoring (both senior and peer mentoring), and emphasize active participation, early leadership, open culture, accessible research support, and a distributed research workflow (i.e. an accessible-distributed model).

**Results:** Since establishment, our group has expanded to include 63 active members from 14 countries (Figure 2), leading a total of 109 peer-reviewed original studies and reviews published. We observed no significant difficulty in communication between team members, nor conflicts due to differences in nationality or ethnicity. Most studies involve cross-country and ethnicity collaborations, and inter-disciplinary and inter-regional knowledge exchanges are frequent. Multi-level mentoring ensured mentoring quality without compromising bonding and communication.

**Conclusion:** An accessible-distributed model of virtual international medical research collaboration and multi-level mentoring is viable, efficient, and caters to the needs of contemporary healthcare. We hope that others will build similar models and improve medical research mentoring globally.

Abstract Figure 1



Abstract Figure 2

