Evidence Based Medicine Workshop: Minimizing bias in clinical research through directed acyclic graphs

(Activity Code: AGI-03-P144)

October 14th 2023, 7:30 - 13:00
Venue: College of Medicine Building H12, Room 126, Qatar University

Target Audience: Doctors and allied health practitioners

Background:

During the past four decades, epidemiologists have focused on controlling the effects of confounding variables in the analysis. However, colliders are just as important as confounders and have not received as much recognition in clinical research practice. Directed acyclic graphs (DAGs) can help to distinguish confounders from colliders by visualization of the assumed structural relationships between the variables under analysis. DAGs are therefore critical to decision making about covariate selection in all types of clinical research. Without this tool it is very difficult to properly control for confounding and to generate unbiased results. Traditionally researchers have used *p*-value based univariable analyses to decide on important covariates which should now be replaced by DAGs. Even when research is being interpreted for use in practice, knowledge of the DAG is a valuable tool.

Aim:

This workshop intends to clarify to the participants what is a DAG, how is it created and how best to use this to select covariates in research when causal inference is the goal of the analysis.

Overall learning objective(s):

To discuss the concept of DAGs and their use in the proper selection of covariates in research to avoid misleading results.

Speakers are from Department of Population Medicine, College of Medicine, QU Health, Qatar University:

This workshop is hosted by the Department of Population Medicine at Qatar University by clinicians who are also epidemiologists with a vast experience in clinical research.

Professor Suhail Doi. MBBS, MClinEpid, FRCP(Edin), PhD
Associate Professor Dr Muhammad Naseem Khan.
MBBS, MSPH, PhD

Activity Schedule:

Time and Speakers	Schedule and Learning outcomes
7:30-8:30 Asma Syed and Omran Musa	• Registration • Introduction to the workshop
8:30-10:00 Suhail Doi	• Compare & contrast association and causation • Explain bias in clinical research • Construct Directed Acyclic Graph (DAG) for a given scenario and its interpretation
10:00-10:30	Coffee Break & Group Discussion
10:30-12:00 M. Naseem Khan	• Apply concepts of DAGs to mitigate bias • Interpret analyses in terms of optimal variable selection • Differentiate between confounding & colliding using real data
12:00-13:00 Suhail Doi, M. Naseem Khan, Asma Syed and Omran Musa	Practical session to consolidate previous learning and use of the Dagitty tool
13:00	Lunch Break

* The scientific planning committee has reviewed all disclosed financial relationships of speakers, moderators, facilitators and/or authors in advance of this CPD activity and has implemented procedures to manage any potential or real conflicts of interest.
* "This activity is an Accredited group learning activity (Category 1) as defined by Ministry of Public Health's Department of Healthcare Professions - Accreditation Section and is approved for a maximum number of 5 Hours."
* "CPD-HP (QU—Health) is accredited by Ministry of Public Health's Department of Healthcare Professions - Accreditation Section (DHP – AS) as a provider of continuing professional development."