



APSAD ADELAIDE 2023

'Unity in Diversity'

Workshop Outline / Structure Template

If you are submitting a workshop abstract, you also need to provide details on the interactive nature of the workshop. Outline the structure of the program, the interactive component, engagement with, and interactive elements for attendees, and submit this template with your abstract for review by the Scientific Advisory Committee.

Due to the number of abstracts received, workshops that do not include a Workshop Outline/Structure Template with the abstract when submitted may result in the workshop being removed from consideration from the conference program.

Consider the following points when organising your workshop;

- A workshop should seek to facilitate and engage discussion with the participants.
- Consider the objectives for your participants and the learning outcomes.
- It is expected that lecture-style presentation is kept to a minimum keeping in mind that a workshop is a facilitation exercise.

Workshop Title: Designing observational studies for credible causal inference in addiction research – Directed Acyclic Graphs and modified Disjunctive Cause Criterion

Presenters: Associate Professor Gary Chan, Dr. Janni Leung

Highlight the activities and timing for your workshop:

ACTIVITY	TIMING (approx. in mins)
Introduction to causal inference	15mins
Introduction to Directed acyclic graphs	20mins
Introduction to the modified disjunctive cause criteria	15mins
Conclusion, Q&A	10mins
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Complete the following questions to help reviewers gauge the interactive nature of the workshop and desired outcomes for participants.

1. What are you hoping to achieve from the Workshop? (Up to 200 words)

I have delivered a half day workshop on a well-received workshop in the causal inference on addiction research, covering the technical details and statistical analysis methods. This year I would like to deliver a workshop on the design aspect of observational study for causal inference.

It will be based on my second invited paper (currently under review) in the journal *Addiction*.

Below is the abstract of the paper.

“Randomised controlled trials (RCTs) are the gold standard for causal inference. Randomisation removes all confounding and allows the treatment effect to be isolated. However, RCTs are conducted under tightly controlled environments and may have limited generalisability. They are also often not feasible in addiction research due to ethical or logistical reasons. Observational data from real-world settings are increasingly used to guide public health and clinical decisions. In this paper, we will provide an overview of modern approaches to designing observational study that enable causal inferences. We will cover four key techniques: Directed Acyclic Graphs (DAGs), modified Disjunctive Cause Criterion, Target Trial Emulation and sensitivity analysis using E-values. We will illustrate these techniques using examples in addiction research and discuss the strength and limitations in their applications in addiction research.”

This workshop will focus on the first two techniques – Directed acyclic graphs and the modified disjunctive cause criteria. Directed acyclic graphs have been increasingly used to guide the design of observational studies for causal inferences in epidemiological research. It can be used to identify key confounding variables based on theories or existing research, and identify variables that could be used to deconfound the relationship between exposure and outcome even information on certain confounders cannot be collected.

Good knowledge about the relationship between variables are required for the construction of DAGs. However, such information is often not available.

2. What are the expected outcomes for participants at the Workshop? (Up to 200 words)



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The participants will have a good conceptual understanding of causal inference, the application of Directed Acyclic Graphs and the modified disjunctive cause criteria on the design of their studies.