Week 3: Data Collection Methods in COVID Research

Nate Bachmeier

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Northcentral University

# Data Collection Methods in COVID Research

The novel coronavirus pandemic has infected nearly 85 million people globally and severely impacted countless businesses (Johns Hopkins, 2020). One of the challenges that come with a *novel* virus is the lack of available information. Researchers around the world stepped forward to fill these gaps through a collection of different data collection methods. During the initial outbreak, information was scarce, making qualitative approaches more appropriate (Valadez et al., 2020). Others published quantitative journals using generic biology models (e.g., Hill functions) or aggregated data from multiple sources. Several of these naïve models were not sufficient in hindsight, resulting in multiple revisions to the covid guidelines (Center for Disease Control and Prevention, 2020) and a confused population. However, this incident can serve as a useful example for data collection methods in highly ambiguous scenarios.

## Preparedness of Our Emergency Department

Hou et al. (November 2020) conducted a postmortem review on the nurses’ perspective of emergency room change adoption. The researchers wanted to understand specifically (1) how did hospitals operate at the initial onset, (2) what changes became necessary, and (3) did those changes place promptly. Their team began by documenting an open-ended interview and a series of follow-up probing questions. Then, they transcribed verbatim one-on-one sessions with dozens of nurses across three hospitals in the same region. Afterward, they assigned two researchers to extract themes from the transcriptions independently. Next, cross-checking the results ensures the extractions were consistent. Finally, a mapping of critical ideas into a hierarchical structure occurred.

Their qualitative assessment shows that during the onset, hospitals were not very efficient. However, frequent updates from leadership instilled confidence to adopt workflow changes quickly. Several nurses experienced distress and isolation because they did not want to concern friends and family. Another observation is that multidisciplinary collaboration reached an all-time high, as all everyone felt they were in this together.

## Modeling the Outbreak

Jiang et al. (May 2020)