Mixed-Methods Convergent Study Designs in Health Professions Education Research: Toward Meaningful Integration of Qualitative and Quantitative Data

Medical education scholars using mixed methods should have a clear purpose and should effectively integrate the qualitative and quantitative strands of their study to yield new insights based on the combined strengths of these two traditions. In mixed-methods convergent study designs, qualitative and quantitative strands of the study occur concurrently.

**Key considerations and points of integration**

**Study design**
- Articulate how combining qualitative and quantitative methods enhances understanding.
- Justify collecting qualitative and quantitative data concurrently rather than sequentially, considering the missed opportunities for using findings from one strand to inform the other.
- For intervention studies, ensure a clear logic model and consistent unit of analysis to allow for convergent analysis and interpretation.

*Example:* Annear and colleagues used quantitative questionnaires and focus groups to understand students' experience of a clinical placement in an aged care facility.

**Data collection**
- Ensure team expertise or seek advice given complexity of using both purposive and probability sampling.
  - Purposive sampling in qualitative research: identifying information-rich cases to illuminate the topic under study.
  - Probability sampling in quantitative research: selecting a representative sample of the population under study.
- Use either the same sample for both strands or different samples drawn from the same population.

*Example:* Annear and colleagues sampled all students undergoing the clinical placement for both the qualitative and quantitative strands.

**Analysis and interpretation of combined data**
- Analyze findings from each strand independently and then together.
- Integrate qualitative and quantitative findings using techniques such as the following:
  - Sequential discussion of findings from each strand,
  - A side-by-side joint display table, and/or
  - Data transformation (e.g., a count of the frequency of themes).

*Example:* Shaw and colleagues present findings from each strand sequentially and in a joint display, then discuss synthesized insights.

**Dissemination**
- Report qualitative and quantitative elements together (e.g., in a single article or report) to maintain and highlight unique insights gained from mixed methods.

**Advantages**
- Develops a more thorough understanding of a problem, intervention, or assessment tool from multiple perspectives.
- May be more time-efficient than a sequential design because of concurrent data collection.

**Disadvantages**
- Requires parallel construction of quantitative and qualitative strands to investigate the same concepts and maintain the same units of analysis.
- May be difficult to explain if results from the two strands diverge.
- Does not allow quantitative findings to inform qualitative follow-up (e.g., the exploration of unexpected findings).

Mixed-methods research requires a firm grounding in both qualitative and quantitative research traditions and a pre-planned intentional approach. Convergent designs provide a thorough yet time-efficient way of understanding a topic.

**References:**

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