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Challenges to and Strategies to Overcome Conceptualization and Methodological Challenges to Mixed Methods Research

混合研究法の概念化と方法論的課題を克服するための課題と戦略

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Outline

概要

- Key methodological challenges in mixed methods research
 - Question/purpose writing
 - Design identification
 - Sequence
 - Strategic integration
 - Sample and selection
 - CDE (confirmed, expanded, and discordance) reporting
- Strategies to Overcome Challenges
- 混合研究法的主要方法論的課題
 - 疑問/目的の記述
 - デザインの識別
 - 順序
 - 戦略的統合
 - サンプルと選択
 - CDE (確認、拡張、不一致)レポート
- 課題を克服するための戦略

Question/Purpose Writing 問題/目的の記述

Challenge 課題

- Research questions for distinct phases and mixed methods are underdeveloped
- 明瞭なフェーズと混合法の研究上の疑問は検討中である
- No Mixed Methods Question
- 混合法の疑問は存在しない



Strategy

戦略

- Provide qualitative and quantitative literature review and generate research questions for both qualitative and quantitative phases
- 定性的、定量的な文献のレビューを行い、定性的・定量的両面の研究疑問を生成する
- Develop mixed methods question (Creswell & Plano Clark, 2018)
 - Methods Focused
 - Content Focused
 - Combination Question
- 混合法の疑問を発現させる (Creswell & Plano Clark, 2018)
 - 方法に注目する
 - 内容に注目する
 - 組み合わせた疑問

Examples of Mixed Methods Questions

研究法の疑問の例

Research Question 研究上の疑問	Characteristics 特徴	Example 例
Methods Focused 方法に注目	Make explicit how mixing of qualitative and quantitative data will occur 定性的データと定量的データの混合がどのように起こるか明確にする	To what extent qualitative results confirm the quantitative results? 定性的結果は定量的結果をどの程度裏付けるだろうか？
Content Focused 内容に注目	Make explicit the content 内容を明確にする	To what extent the qualitative themes concerning nurse educators' challenges and experiences consistent with the quantitative data? (Younas et al., 2019) 看護の教育者の課題と経験に関する定性的テーマはどの程度定量的データと一致しているだろうか？（Younasら、2019年）
Combination 組み合わせ	Make explicit both methods and content 方法と内容の両方を明確にする	To what extent do the quantitative data about levels and factors affecting resilience converge with or diverge from the qualitative data about caregivers perceived factors affecting their resilience? (Mixed Methods) (Durante et al., 2021) 回復力に影響するレベルおよび因子に関する定量的データは、回復力に影響する介護者が認識する因子に関する定性的データにどの程度収斂するのかもしれないか？（混合法）（Duranteら、2021年）

Design Identification

デザインの識別

Challenge 課題

- Incorrect identification of mixed methods research design
- 混合研究法のデザインの間違った識別



Strategy 戦略

- Use mixed methods design typologies
(e.g., Creswell & Plano Clark, 2018)
 - Convergent---Parallel Data Collection
- Exploratory Sequential---Qualitative informs quantitative design and phase
- Sequential Explanatory---Quantitative followed by qualitative
- 混合法デザインの類型を使用する
(例、Creswell & Plano Clark, 2018)
 - 収斂---並列データの収集
 - 探索的順次---定性的データが定量的デザインとフェーズを特徴付けする
 - 順次的説明---定量的データの後に、定性的データがくる

Sequence 順序

Challenge 課題

- How to identify correct sequence/incorrect sequence can affect the validity of study
- 正しい順序/間違った順序をどのように特定するかが研究の妥当性に影響し得る



Strategy 戦略

- Follow the typologies

Example: Interested in developing a data collection instrument, intervention, digital tool, or implementation strategies---Use Exploratory Sequential design

- 類型に従う

例: データ収集機器、介入、デジタルツールまたは導入戦略の実施に興味---探索的順次デザインを使用

Sample and Selection

サンプルと選択

Challenge 課題

- Adequate sample size for qualitative and quantitative component for all types of mixed methods designs
- 混合法デザインのすべてのタイプに適した定性的コンポーネントと定量的コンポーネントの適切なサンプルサイズ
- Representative sample for sequential designs
- 順次デザインの代表的サンプル

Strategy 戦略

- Use methodological guidance for individual qualitative and quantitative phases
 - Saturation principle in qualitative phase
 - Power analysis and estimation formulas for quantitative phase
- 個別の定性的フェーズおよび定量的フェーズに関する方法論的ガイダンスを使用
 - 定性的フェーズにおける飽和原則
 - 定量的フェーズの検出力分析と推定式
- Purposeful sampling
- In sequential explanatory- use connecting technique
- 目的があるサンプリング
- 順次的説明において- 連結技法を使用

Sample and Selection

サンプルと選択

Saturation in Qualitative Research

定性的研究の飽和

- *Theoretical saturation*- at sampling stage and relates to development of theoretical categories
- *Inductive thematic saturation*-at analysis stage relates to emergence of new codes and themes
- *A priori thematic saturation*-at sampling and relates to the extent to which themes and codes are exemplified in the data
- *Data saturation*- at data collection and relates to what new data repeats what was expressed in previous data

Saunders et al. (2018)

- *理論的飽和*- サンプリング段階において、および理論的類型の作成に関連する
- *帰納的テーマの飽和*-解析段階において、新しいコードとテーマの発現に関連する
- *演繹的テーマの飽和*- サンプリングにおいて、どちらのテーマとコードがデータの中で典型的な例となる程度に関連するか
- *データの飽和*- データ収集において、どの新しいデータが以前のデータで示されたものを繰り返しているかに関連する

Saundersら(2018年)

Sample and Selection

サンプルと選択

Sample Size Estimation in Quantitative

定量的研究のサンプルサイズ推定

- Power analysis for correlational and interventional designs
- Methodological guidance for data collection instruments
 - 1:10 (Item: Participant) for psychometric testing of data collection instruments (Norman & Streiner, 2018)
 - Sample in sequential explanatory design should be drawn from the original sample
 - It is good to have same participants in convergent designs
- 相関デザインと介入デザインの検出力分析
- データ収集測定用具の方法論的ガイダンス
 - データ収集測定用具による心理試験に関する1:10 (アイテム: 参加者) (Norman & Streiner, 2018)
 - 順次説明的デザインのサンプルは元のサンプルからとるべきである
 - 収斂デザインでは同じ参加者を集めることが望ましい

Strategic Integration

戦略の統合

Challenge

課題

- Integration is considered an afterthought
- 統合が結果論だと見なされている
- No integration or integration only in the narrative
- 統合しない、もしくは説明だけの統合



Strategy

戦略

- Make explicit the intent of integration during study design- for example mixed methods question, reviewing qualitative and quantitative literature
- Integration at design, methods, data collection, analysis, interpretation, and reporting levels
- Innovative tools and methods
 - Joint displays
 - Collaging technique
- 研究デザインの時の統合の意図を明確にする-例えば、混合法の疑問、定性的文献と定量的文献の再レビュー
- デザイン、方法、データ収集、分析、解釈、報告レベルにおける統合
- 革新的なツールと手法
 - ジョイントディスプレイ
 - コラージュ技法

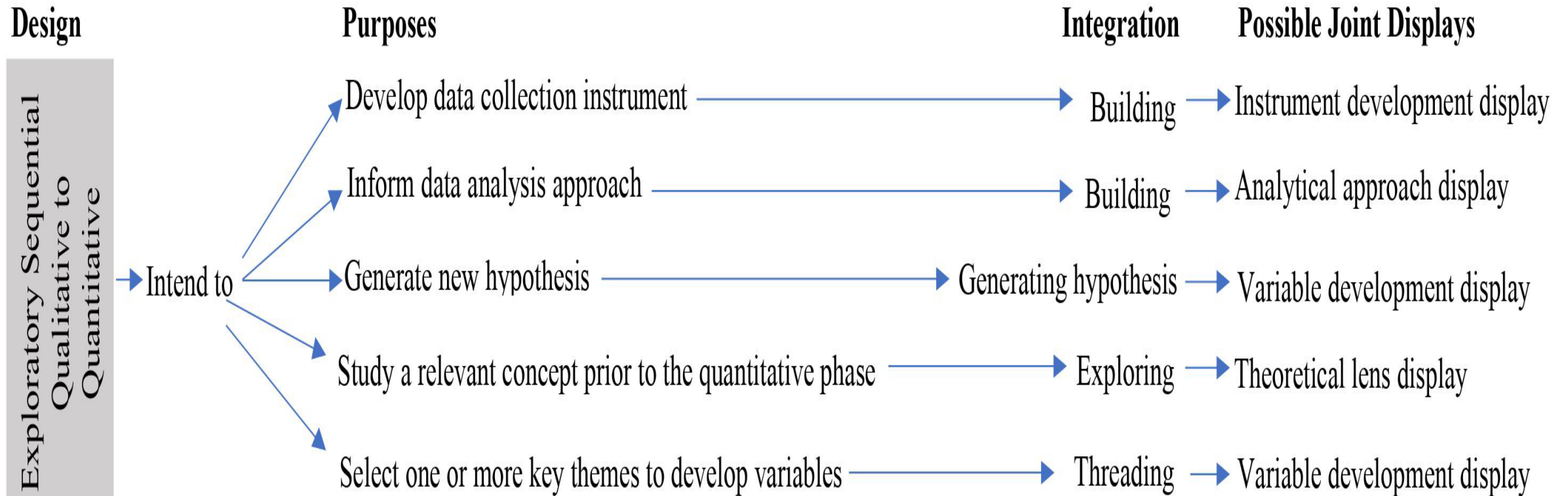
Decision Tree

決定木

- A decision tree is useful for making sequential decisions under uncertain conditions. It was defined as a procedural tool for choosing appropriate procedures and methods for use in practice.
- Our proposed decision tree for mixed methods includes three main components.
 - The typology of core mixed methods designs and their key purposes.
 - 14 key purposes are outlined and linked to the second (i.e., integration procedures) and third components (i.e., joint displays).
- 決定木は、不確実な状況において順次的決断をするために有用である。実践で使用するのに適切な手順と手法を選択するための手順的ツールと定義された。
- 混合研究法に我々が提案する決定木には、3つの主要なコンポーネントがある。
 - 主要な混合法デザインの類型とその主な目的。
 - 14の主な目的を概説し、2つ目のコンポーネント（例；統合の手順）と3つ目のコンポーネント（例；ジョイントディスプレイ）にリンクしている。

Decision Tree

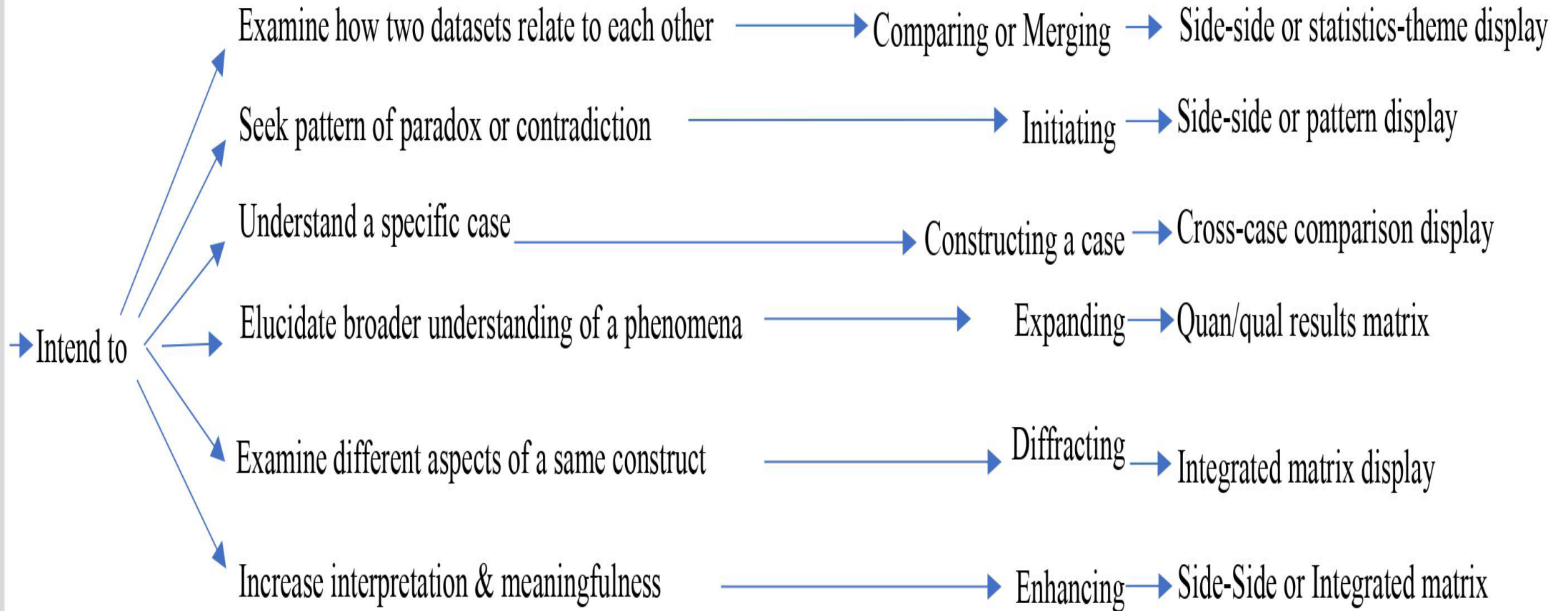
決定木



Decision Tree

決定木

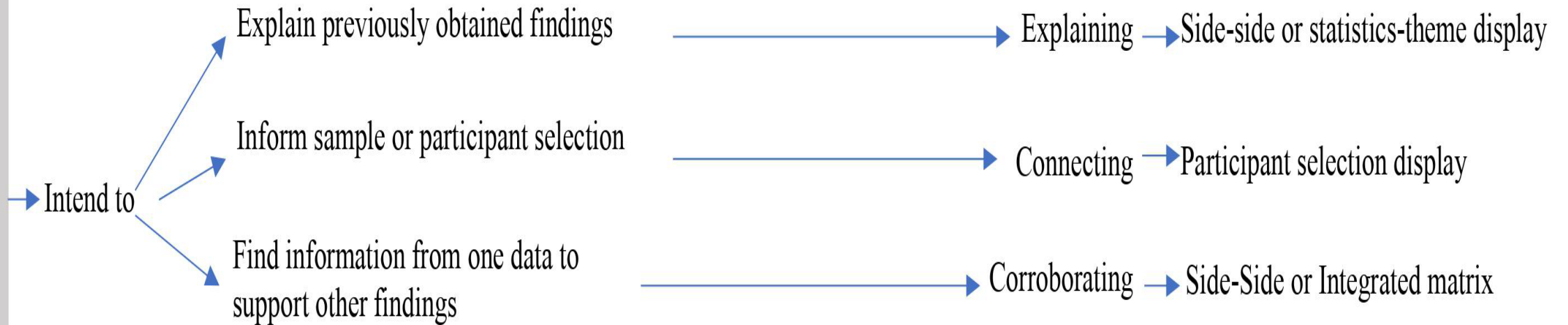
Convergent Design Parallel Qualitative & Quantitative Phases



Decision Tree

決定木

Explanatory Sequential Design
Quantitative to Qualitative



CDE (confirmed, expanded, and discordance) Reporting

CDE (確認、拡張、不一致)レポート

Challenge 課題

- Integration, without indicating how qualitative, quantitative findings converge, diverge, or expand

定性的、定量的研究結果が、
収斂、乖離、または拡張する
ことを示していない統合



Strategy 戦略

- In your joint displays and narrative, make explicit the CDE findings
- ジョイントディスプレイまたは会話の中で、CDEの研究結果を明確にする
- Use strategies to address discordance of qualitative and quantitative data
- 戦略を用いて、定性的データおよび定量的データの不一致に対処する

Strategies to address discordance of qualitative and quantitative data

定性的データと定量的データの不一致に対処するための戦略

Strategy 戦略	Description 説明
Reconciliation 調和	Re-analysis of data to resolve the discordant findings (Pluye et al., 2009) データを再分析して不一致の研究結果を解決
Initiation 開始	Developing new questions and collecting new data to explain discordance (Pluye et al., 2009) 新しい質問を作成し、新しいデータを収集して不一致を説明する(Pluyeら、2009)
Bracketing 項目化	Labelling irreconcilable qualitative and quantitative data as extreme cases, and developing plausible explanations to understand it (Pluye et al., 2009) 一致しない質的および量的データを極端な事例としてラベリングし、それを理解するために説得力のある説明を作成する(Pluyeら、2009)
Exclusion 除外	Question the validity of qualitative or quantitative phase or the whole mixed methods study (Pluye et al., 2009) 定性的または定量的フェーズ、もしくは混合法研究全体の妥当性を問う(Pluyeら、2009)
Taking a dialectical perspective 弁証法的観点でとらえる	Identify conflicts in data, analysis, and interpretation, and identify the source and nature of discordance (Bazeley, 2018) データ、分析及び解釈における矛盾を特定し、不一致のソースと性質を特定する(Bazeley, 2018)
Intensive & extreme case 集中した事例と極端な事例	Similar to bracketing (Bazeley, 2018) 項目化と同様 (Bazeley, 2018)
Comprehensive case and variable analysis 包括的な事例と変数解析	Identify discordance in quantitative variable, identify discordance in qualitative data, and determine variables for entry into mixed analysis (Younas et al., 2022) 定量的変数の不一致を特定し、定性的データの不一致を特定し、混合解析に入るための変数を決定する(Younasら、2022)
Sociocultural examination of discordant findings 不一致の研究結果に関する社会文化的検証	Develop qual-code-quan mean matrix, Listing number of discordant findings under each theme, Creating sociocultural profile of each discordant finding, Labeling discordant findings as trivial or significant (Younas et al., 2022) 定性的-コード-定量的平均マトリックスを作成し、それぞれのテーマにおける不一致の研究結果の数をリスト化し、それぞれの不一致の研究結果の社会文化的統計データを作成し、不一致の研究結果が自明か有意かをラベリングする(Younasら、2022)

Sociocultural Examination of Discordant Findings

不一致な研究結果の社会文化的検証

Table 2. Sociocultural exploration strategy to address discordant findings.

Steps	Supporting data		
Developing a qual-code—Quan mean matrix of the overarching theme	Qualitative theme and number of codes	Number of items	Quantitative mean
	Personal Challenges (n = 59)	8	3.08
	Institutional Challenges (n = 40)	3	3.13
	Challenges in Clinical Teaching (n = 72)	9	3.58
	Classroom Environment Challenges (n=39)	5	3.12
	Student Related Challenges (n=84)	11	3.29
	Ministerial Challenges (n=53)	8	3.78
	Educational Research Challenges (n=29)	3	3.65
Likert scale for quantitative mean: 1= To no extent, 2= To a little extent, 3= To some extent, 4= To a moderate extent, 5= To a great extent			
Listing number of discordant findings under each theme	Qualitative Theme	Number of discordant findings	Items identified as discordant finding
	Personal Challenges	1	The educator lacks personal motivation to teach students (Mean = 2.79, Qualitative codes = 09)
	Institutional Challenges	1	The institution provides no guidance on students' assessment and evaluation (Mean= 2.96, Qualitative codes=10)
	Challenges in Clinical Teaching	0	
	Classroom Environment Challenges	1	There is a lack of multimedia resources (Mean= 2.78, Qualitative codes=06)
	Student Related Challenges	1	Educators face difficulty in teaching students of opposite gender due to cultural factors (Mean= 2.83, Qualitative codes=05)
	Ministerial Challenges	0	
	Educational Research Challenges	0	

Sociocultural Examination of Discordant Findings

不一致な研究結果の社会文化的検証

Creating sociocultural profile of each discordant finding	Item	Sociocultural profile based on the region and educational culture
	The educator lacks personal motivation to teach students	Two of the 12 educators discussed this in their qualitative interviews. These two educators were from Swat and Peshawar region where the educational culture and environment is different from other more developed cities. Compared to Lahore, Islamabad, and Rawalpindi the nursing institutions in these two cities are in the recent stages of development. The educators discussed that they had concerns with the approach of the nursing administration concerning the use and implementation of new strategies. Therefore, there are two possibilities. First, these two educators projected this experience and judged other educators as having limited motivation to teach students through the use of creative teaching and learning strategies. Second, the educators working at the institutions may be less motivated. However, the first explanation is the most likely to be true because the quantitative data from these cities indicated that educators' lack of motivation was not a significant challenge

Labeling discordant findings as trivial or significant	Item	Final label and decision	
	The educator lacks personal motivation to teach students	Trivial	Further exploration needed in the regional context
	The institution provides no guidance on students' assessment and evaluation	Trivial	Further exploration needed in the regional context
	There is a lack of multimedia resources	Trivial	Further exploration needed in the regional context
	Educators face difficulty in teaching students of opposite gender due to cultural factors	Trivial	Further exploration needed in the regional context

THANK YOU

ありがとうございました

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