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The 2nd International Nursing Research Conference
"Future Nursing Research and Innovation for Sustainable Global Health"
to Commemorate the 125th Anniversary of the Birth of HRH Princess Srinagarindra
Jointly Organised by WANS, TNMC & NAT

Mixed Method Research

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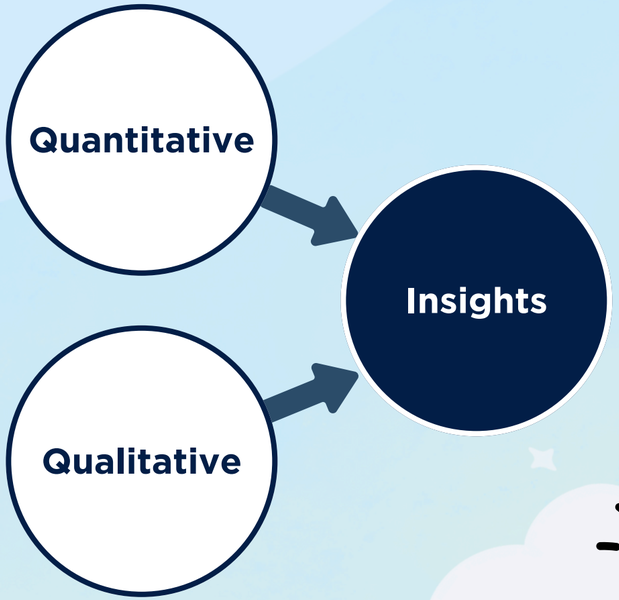
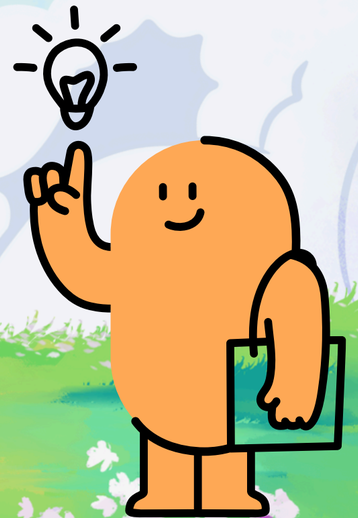
Mixed Method Research

Explanatory Design

Exploratory Design

Convergent Design





I. Exploratory Sequential Design

Exploratory Sequential Design

- New variable development
- New measurement development
- Intervention development
- Digital tool development

I. Exploratory Sequential Design

Phase 1 (QUAL):
This phase has higher priority (often indicated by using uppercase letters for "QUAL") and involves qualitative data collection and analysis to explore a phenomenon in depth.

Phase 2 (QUAN):
This phase involves quantitative data collection and analysis to test or generalize the initial qualitative findings on a larger sample.

Building/Connecting:
The results from the qualitative phase are used to inform the design and implementation of the subsequent quantitative phase.

Integration:
Both sets of results are interpreted together to provide a comprehensive understanding of the research problem.

Mixed Method Research: Exploratory Sequential Design

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RESEARCH ARTICLE

Culturally-grounded mother–daughter communication-focused intervention for Thai female adolescents

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Abstract

Teenage pregnancy-prevention interventions have fallen short in significantly decreasing risk of pregnancy for Thai populations. The "breaking the voice" ("rak luk khun tong pood") culture-appropriate teenage pregnancy-prevention program was developed using community-based research. Qualitative analyses of focus group data identified salient factors related to sexual communication and behavior. The integration of focus group results with theoretical constructs guided the development of an intervention to reduce risky sexual behavior by increasing communication between mothers and their adolescent daughters. A total of 157 mother–daughter dyads from congested areas in Bangkok participated in pilot testing of the intervention by the use of a survey. The findings indicated a significant increase in the frequency of and number of sexual risk communication ($P < .05$). There was a significant increase in perceived power in relationship control, ability to prevent sexual risk, assertiveness, and ability to decrease sexual risk among daughters ($P < .05$). "Breaking the voice" represents a female-focused and culturally-relevant intervention to combat teenage pregnancy.

- In Thai communities, culturally-driven gender roles, parent–adolescent communication, and traditional family interactions play a role in HIV and sexual risk behaviors.
- Studies have shown that Thai parents experience difficulty in talking about sex and contraception with their children, or view sexual health as a topic that should not be discussed.
- Few teenage pregnancy-prevention programs in Thailand have used reinforcement of positive cultural characteristics.
- Developing effective culturally-tailored strategies to reduce sexual risk among Thais is imperative given the proportional impacts of HIV.

The aim of the present study in two phases, was to provide an overview of the development, implementation and pilot results of this program. The second phase of the study was to develop and test the effect of the program.

Phase 1 (QUAL)	Focus groups were conducted with dyads of 58 Thai mothers and 63 female daughters aged 12–15 years old in four communities in central areas of Bangkok, Thailand. To glean information from participants regarding: (i) feelings toward sexual communication; (ii) sexual communication issues within the family, as well as challenges to open communication; (iii) barriers in sexual communication between mothers and adolescent daughters; and (iv) suggestions for intervention content and strategies.
Building/ Connecting	Identifying norms and expectations about sexual communication, Challenges to open communication, Burdens in sexual communication and how to overcome them **Intervention**

TABLE 1 "Breaking the voice" sessions

Session	Principle and theory	Learning objectives
1. STI/HIV knowledge Cultural- and gender-related issues	• Theory of gender and power • Cultural appropriateness	Both mothers and daughters: • Discuss cultural fit of sexual communication in family • Define gender roles in sexual relationship and identify female values as Thai women Mothers: • Learn methods to raise teen daughters Daughters: • Increase understanding Thai values on sexual matters
2. Cultural- and gender-related issues	• Theory of gender and power • Attitude changes • Personal communication	Both mothers and daughters: • Identify feelings toward sex, understanding feeling differences between mothers and daughters • Learn how to initiate sexual communication Mothers: • Increase ways to deal with teen daughters Daughters: • Increase understanding and awareness of Thai men's and women's attitudes regarding sex
3. Conversations with mothers/ daughters about HIV/AIDs and pregnancy risk reduction	• Theory of gender and power • Self-efficacy • Sexual communication	Both mothers and daughters: • Practice how to communicate sexual matters Mothers: • Analyze ways and practice how to communicate about sex Daughters: • Increase understanding of self and the influence on personal sexual decision • Identify ways to achieve self-esteem in relationship expectation

4. Sexual risk-reduction behavior and intention	• Theory of gender and power • Sexual risk self-assessment • Sexual communication	Both mothers and daughters: • Practice how to communicate sexual matters Mothers: • Analyze ways and practice how to communicate about sex Daughters: • Determine levels of personal risk for STI/HIV and pregnancy • Learn methods of self-protection from STI/HIV and pregnancy protection • Identify ways to express views about positive sexual satisfaction
5. Safer sex peer norms	• Theory of gender and power • Contextual factors of sexual behavior • Sexual communication	Both mothers and daughters: • Practice how to communicate sexual matters Mothers: • Increase understanding on worldview on sex and the influence on individual decision • Increase awareness of female's attitudes regarding sex Daughters: • Identify related risks regarding sex • Learn methods to manage risk • Increase self-esteem in self-protection communication
6–7. Sexual communication practice	• Self-efficacy • Sexual communication	Both mothers and daughters: • Communicate and practice contraception and interpersonal relationship skills
8. Celebration of achievement	• Self-determination	Both mothers and daughters: • Identify problems, economic challenges, and individual and social benefits that affect healthy lifestyles for Thai teens

Phase 2 (QUAN)	"Breaking the voice" is a 3 h weekly intervention administered in 6 weeks, with an introduction and three educational modules per session. The "breaking the voice" culturally-appropriate-based teenage pregnancy-prevention program included 157 mother–daughter dyads from three congested areas in Bangkok.
Building/ Connecting	• Exploration of sensitive topics, that perhaps were more sensitive in nature than in previous discussions, might have resulting in attitudes toward sexual communication not changing. • Communication about sex was an area of concern for both mothers and daughters to prevent teenage pregnancy.

Mixed Method Research: Exploratory Sequential Design

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Using an exploratory sequential mixed methods design to adapt an Illness Perception Questionnaire for African Americans with diabetes: the mixed data integration process

Olayinka O. Shiyanbola, Deepika Rao, Daniel Bolt, Carolyn Brown, Mengqi Zhang & Earlise Ward

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To culturally adapt the Illness Perception Questionnaire-Revised (IPQ-R) and address the sociocultural contexts of African Americans with type 2 diabetes.

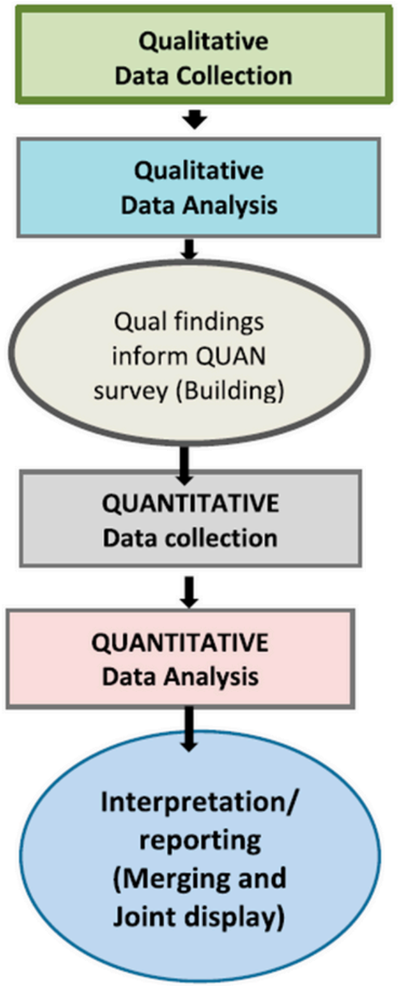
Building/ Connecting	This study used building approach to systematically develop quantitative items based on qualitative data and the merging approach to evaluate congruence between the findings of the two phases. The merging of both phases is demonstrated via the joint display. • the 'building' approach involves using the data from one phase to inform the data collection approach of the second phase. • Data integration at the reporting level includes using the 'merging' approach to form a 'joint display'

Building approach

Deductive + Inductive Content analysis

Merging

Member-checking to verify credibility of the findings.



Procedures	Products
Focus groups re African American beliefs about type 2 diabetes (n=40)	Transcripts
Nvivo coding and theme development Develop phrase codes from coded text	Key themes relevant to beliefs about type 2 diabetes including its sociocultural influences
Write new survey items Adapt existing survey items Cognitive interviewing (n=10)	Adapted Illness Perception Questionnaire
Survey of African Americans with type 2 diabetes (n=170)	Numerical survey item scores
Preliminary analysis Item Correlations	Correlation Analysis
Explore extent to which qualitative findings were integrated Evaluate congruence between Qual and QUANT data	Culturally adapted instrument to measure African Americans' illness beliefs about type 2 diabetes

QUAL

- Relevant themes related to family, religion, food etc were matched to ESRM domains
- Themes related to race, community, and provider mistrust (not part of ESRM) formed the new sociocultural influence domain

Mixed

- Relevant, most descriptive and illustrative quotes selected for each theme
- New items were written and old items were re-worded based on quotes

quant

- Forty-four new and adapted items were created and added to the original IPQ-R
- Field testing of the adapted survey questionnaire was completed

Illness Perception Questionnaire (IPQ-R) Survey Items[b] and domains	Themes from Qualitative Focus Groups	Sample phrase codes	Corresponding Adapted Survey Items
Timeline (acute/chronic): IP1[a] My diabetes will last a short time IP2 My diabetes is likely to be permanent rather than temporary IP3 My diabetes will last for a long time IP4[a] This diabetes will pass quickly IP5 I expect to have this diabetes for the rest of my life IP18[a] My diabetes will improve in time	Diabetes will last a while and does not go away.	'And I know there's no cure for being a diabetic, you're going to always take this medication' [Pt 20] 'I still believe that, and I'm probably wrong, but I think once the damage is done now, I think it's no reversing it.' {Man 3} 'it don't really bother me no more, because there's nothing I can do with it to make it go away. The only one thing I can do is to take my medicine faithfully.' [Pt 38]	1. There is a known cure for diabetes[a] 2. Diabetes can be reversed[a] 3. Nothing can make my diabetes go away
	Diabetes goes away if you exercise and lose weight	'I know some people that were a diabetic, and they got a good, healthy, balanced diet and went to the gym, and they're no longer on medicine or anything anymore. I'm believing that it'll go away for me one day' [Pt 25] 'So if you, in other words, if you exercised and lost weight, there's a possibility your diabetes would go away' [Pt 38]	4. My diabetes could go away if I exercise, lose weight and eat healthy [a]

Consequences: IP6 My diabetes is a serious condition IP7 My diabetes has major consequences on my life IP8[a] My diabetes does not have much effect on my life IP9 My diabetes strongly affects the way others see me IP10 My diabetes has serious financial consequences IP11 My diabetes causes difficulties for those who are close to me	Relationship consequences	'You don't be feeling it all the time like you used to … With my family and my woman. You know, like they think you're a diabetic because you don't have no control over your life. And they like dictate you … you be in the restaurant ordering. They say, you can't have that … it changed the other person. They don't feel the same about me no more. They ain't paying attention to me no more.' [Pt 06] 'Well, for me, like he said, like the sexual drive, you know, it was a thing where just, you know, don't touch me.' [Pt 18]	1. My diabetes reduces the control I have over my life 2. My diabetes has harmed my relationship with others close to me
	Friends/family relationship consequences	'Or … you go out to eat with the girls, and they like … you shouldn't be drinking soda. You should be drinking water … you shouldn't even be thinking about dessert, or drinking … You know, yeah, I know … Thank you for being concerned, but I have this.' [Pt 04] 'And diabetes changes your family, because once they know you got it, they like always on me. Like if we go to a family event, I can't have anything. I can't even enjoy myself. … And like my young daughter, she going to have a baby … Then she went on to, oh, when my baby get here I don't know if I'm going to let you watch him.' [Pt 06]	3. My diabetes has caused difficulties in my relationships with family and friends 4. My diabetes has caused my family and friends to be less close
	Lifestyle changes	'I don't have the attention span to stay awake a long time after being at work all day. I just want to go home … Yeah. I'm very much, you know, social but a loner … I just don't have the mental capacity to do all that anymore' [Pt 18]	5. My diabetes reduces my participation in social activities within the community
	Experiences with Food	'I used to enjoy food, and I don't have that luxury anymore. That's gone.' [Pt 03] 'Well, like food is your enemy now' [Pt 06]	6. My diabetes takes away the ability to enjoy food in my daily life

Qualitative	• Themes of various illness perceptions such as diabetes timeline perceptions, food and lifestyle consequences, understanding the disease with respect to family members' experiences, fear of future complications, and feelings of anger and frustration, were all informed by lived experiences and sociocultural.
Quantitative	• The average item scores and significant item-total correlations were important indicators of the initial validity and reliability of the culturally adapted survey items in this population.
Integration	• Integration of qualitative and quantitative data occurred at two points, first when using the building approach to create new culturally adapted items and then when using the merging approach to report the results through the joint display.

II. Explanatory Sequential Design

Explanatory Sequential Design

Quantitative Data Collection and Analysis → Follow up with → Qualitative Data Collection and Analysis → Interpretation

Determine what quantitative results need further explanation

II. Explanatory Sequential Design

Hosp Pediatr. 2013 Jul;3(3):204-11. doi: 10.1542/hpeds.2012-0094.

Preventing dehydration-related hospitalizations: a mixed-methods study of parents, inpatient attendings, and primary care physicians

Leticia Shanley [1], Vineeta Mittal, Glenn Flores

Affiliations + expand

PMID: 24313088 DOI: 10.1542/hpeds.2012-0094

Abstract

Objective: The goal of this study was to identify the proportion of dehydration-related ambulatory care-sensitive condition hospitalizations, the reasons why these hospitalizations were preventable, and factors associated with preventability.

Methods: A cross-sectional survey of primary care providers (PCPs), inpatient attending physicians, and parents was conducted in a consecutive series of children with ambulatory care-sensitive conditions admitted to an urban hospital over 14 months.

Results: Eighty-five children were diagnosed with dehydration. Their mean age was 1.6 years; most had public (74%) or no (17%) insurance, and were nonwhite (91%). The proportion of hospitalizations

To first quantify the proportion of dehydration-related admissions that were preventable and then explain how and why those admissions could be prevented

Phase 1 (QUAN)	Researchers analyzed hospital records to determine the prevalence and characteristics of dehydration-related admissions, quantifying how many were preventable. **Findings:** A certain percentage of admissions were statistically identified as "preventable," but the numbers alone did not explain the underlying causes (e.g., patient/caregiver behavior, system issues).
Connection (Connecting and Building)	Multiple levels This is an example of data integration through connection. Based on the quantitative findings, researchers purposefully selected a sample of patients with "preventable" admissions and their caregivers/providers for follow-up interviews. The interview guide focused on exploring the reasons behind the preventability.

A

Parent	Primary Care Physician	Inpatient Attending Physician
Agreement		
"I don't know; maybe if they (clinic doctors) had given me more information before I had gone to Honduras with my child. If they had prescribed her some vitamins, this could have avoided that she may get something there."	"Yes; maybe preventable with more outpatient information about safety when traveling with child to another country."	"Yes"
Disagreement		
"No; it was so sudden."	"Not preventable; the child was very dehydrated. This hospitalization was necessary."	"Yes; the child might have not needed to be admitted if we had a short-stay unit in the ER. This unity can help us to have more time, around 4-6 hours, just for oral rehydration and observation of kids like this."

Quantitative Finding (The "What")	Supporting Qualitative Findings (The "Why")	Integrated Interpretation (The Metainference)
80% of preventable admissions were from aged care facilities.	*"We often can't get a hold of a doctor quickly on weekends, so we send them to the ED to be safe."*	A system issue with weekend medical coverage, rather than caregiver competence, is a primary driver for unnecessary hospital transfers from aged care.
Admissions were 3x higher in patients with low perceived social support scores.	*"I live alone and sometimes forget to drink water or take my medication; there's no one to remind me."*	The absence of a social support network is a significant, modifiable risk factor for dehydration-related hospitalizations.

III. Convergent Design

Convergent Parallel Design

Quantitative Data Collection and Analysis

Qualitative Data Collection and Analysis

→ **Compare or relate** → **Interpretation**

Discuss areas of convergence or divergence between the quantitative & qualitative results

Assessing Patient Satisfaction with Post-Surgical Pain Management

Research Aim: To gain a comprehensive understanding of patient satisfaction with post-surgical pain management from both a measurable outcomes perspective and a lived experience perspective.

Phase 1 (QUAN)	Nurses administer a standardized, validated Patient Satisfaction with Pain Management survey to post-surgical patients (e.g., using a 1-5 Likert scale) **Findings:** Data analysis yields mean satisfaction scores, identifying general trends, e.g., "75% of patients reported satisfaction with pain management (Mean score 4.1/5.0)".
Phase 2 (QUAL - concurrently)	The same patients participate in semi-structured interviews with a nurse researcher to describe their experiences, perceptions, and challenges related to pain management after surgery. **Findings:** Thematic analysis reveals themes like "fear of addiction," "difficulty communicating pain levels," and "receiving empathetic care."

Assessing Patient Satisfaction with Post-Surgical Pain Management

Research Aim: To gain a comprehensive understanding of patient satisfaction with post-surgical pain management from both a measurable outcomes perspective and a lived experience perspective.

Integration	The results are merged in the discussion section using a joint display table. The researchers compare the quantitative scores with the qualitative themes to see if the findings confirm, contradict, or expand upon each other.

Quantitative Finding (Survey Results: The "How Much")	Qualitative Finding (Interview Themes/Quotes: The "Why" or "How")	Integrated Interpretation (Metainference)
High overall satisfaction with pain management (Mean score: 4.1/5.0)	Theme: *Receiving Empathetic Care*. *"The nurse really listened to me when I told her the pain was sharp, not dull. That made all the difference."*	Overall high satisfaction appears linked to the quality of nurse-patient communication and empathetic care, suggesting relational factors are as important as medication.
Low scores on the "ability to control pain" subscale (Mean score: 2.5/5.0)	Theme: *Fear of Addiction*. *"I tried not to push the pain button too much because I didn't want to get hooked on the strong stuff."*	Despite adequate pain control (high satisfaction scores), patients lack a sense of personal control, possibly due to fears of addiction. This is a crucial area for improved patient education.
No significant difference in pain scores between age groups.	Theme: *Difficulty Communicating Pain Levels*. *"Older patients might not want to bother the busy nurses, they just sit there quietly hurting."*	The quantitative data suggests age is not a factor in pain levels, but the qualitative data reveals that some older patients might underreport pain, which requires more attentive nursing

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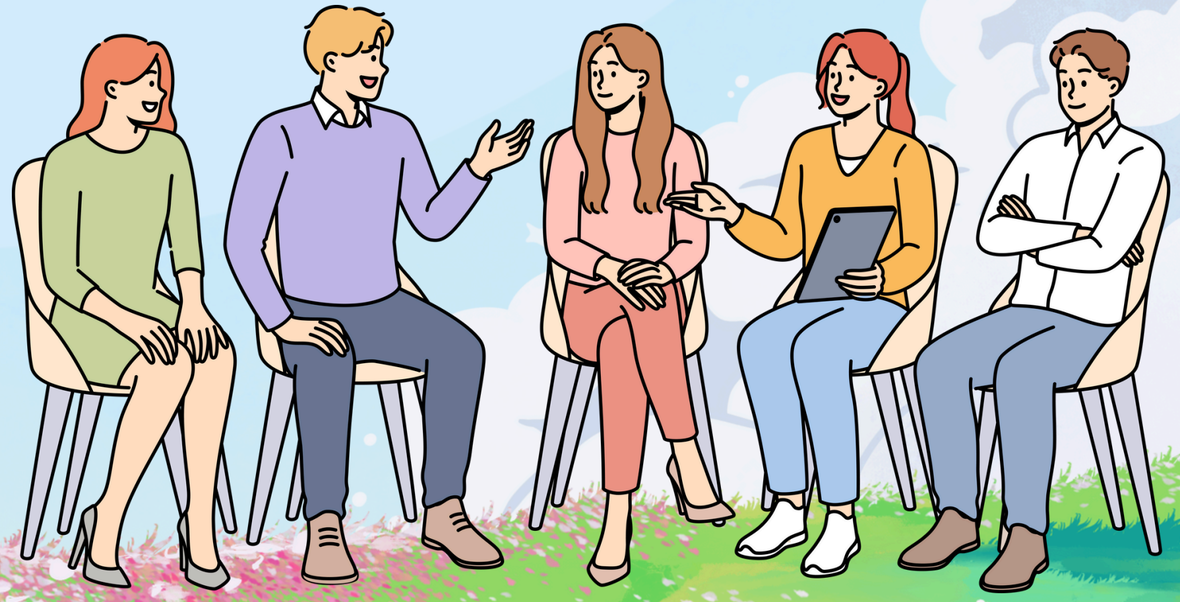
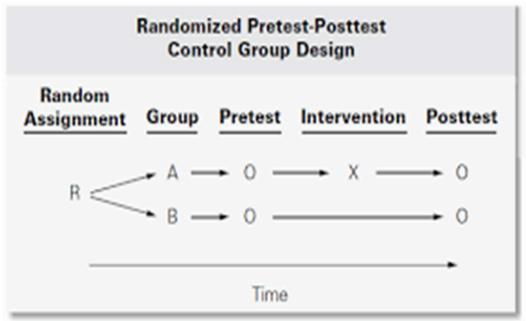
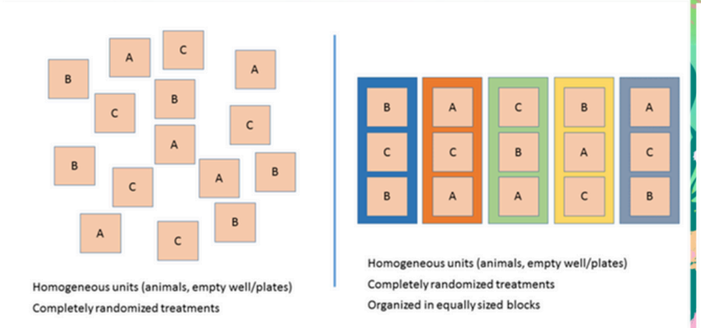
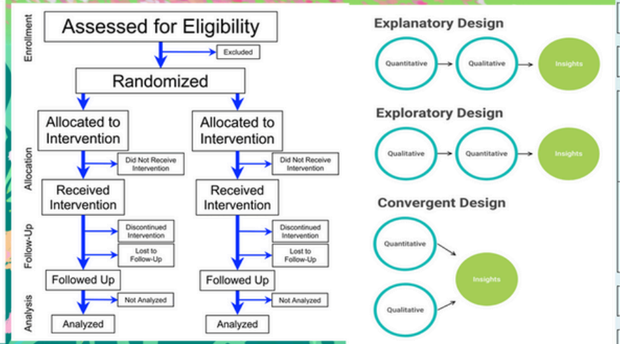
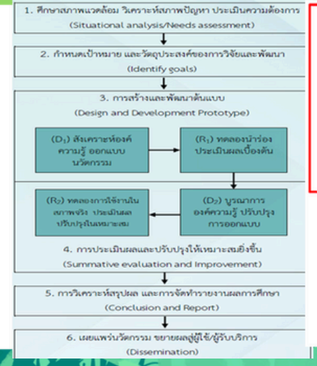
Q & A











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Common Pitfalls in Mixed Method Research

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Common Pitfalls in Mixed Method Research

1. Rational

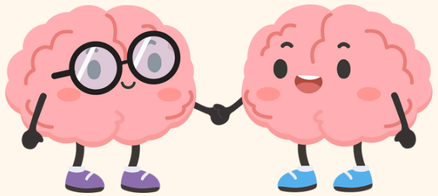
Failing to provide a clear justification for why a mixed methods approach is necessary

2. Insufficient Integration

Integration should ideally occur at the design, data collection, analysis, or interpretation stages to ensure the "whole is greater than the sum of its parts"

3. Sampling

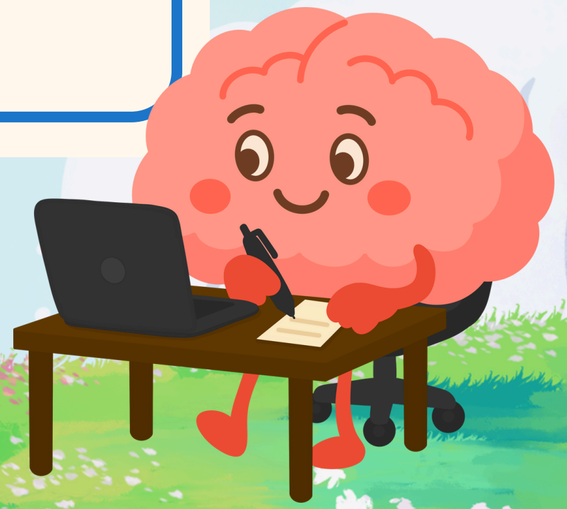
The relationship between the two samples ? (same participants, subset, or separate groups)



Common Pitfalls in Mixed Method Research

4. Data Collection

- Clarification of timing and sequence between data collections
- Instruments and measures valid, reliable, and appropriate for the respective methods
- Response rates to open-ended questions in quantitative surveys tend tobe low, biased, and terse, limiting purposive sampling and valid inferencesregarding themes.



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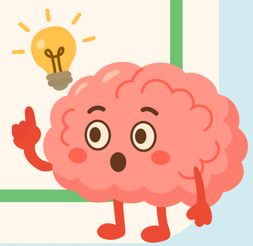
Common Pitfalls in Mixed Method Research

5. Quality and Validity

- Quality criteria for quantitative (validity, reliability) and qualitative addressed? (rigor trustworthiness)
- Integration validity (meta-inference validity)



6. Data Analysis

- Integration points between the two analyses described? (e.g., comparing results, using one to build the other)
- Procedures for merging or linking data

Common Pitfalls in Mixed Method Research

7. Data Analysis

- Procedures for merging or linking data

4 basic types of integration in a MMR study, as described by Fetters, Curry, and Creswell.

Merging

- Integration where 2 data sets are combined for analysis

Connecting

- linking the analysis of 1 data set to the collecting of a second data set through sampling
- Exe. qualitatively interviewing a subset of quantitative survey respondents

Building

- 1 database informs subsequent data collection rather than having a direct connection

Embedding

- where either connecting, merging, or building occurs throughout study phases as qualitative and quantitative data are collected at various points within multiple procedures

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Key Take Aways

1. Integration-how qualitative and quantitative data are mixed throughout the research process-is the key to mixed methods research.
2. Mixed methods research approaches are best suited to answer questions or produce outcomes that are only possible with both qualitative and quantitative research methods.
3. Mixed methods research is a third research approach alongside quantitative and qualitative research.
4. There are three core mixed methods research study designs. These designs can be combined in different ways to create a mixed methods study of variable complexity.

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