

Item Review: Sensitivity and Differential Item Functioning (DIF)

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Objectives

- By the end of this webinar, participants will be able to:
 - Identify the purpose of conducting Sensitivity panel review and Differential Item Functioning (DIF) panel review
 - Understand what it means for an item with DIF
 - Describe how NCSBN[®] conducts Sensitivity panel review and DIF panel review

Item Development Process



Purpose of Sensitivity and DIF Review



Fairness in an exam

It is critical that every candidate has a fair opportunity to demonstrate their nursing knowledge and skills.

Fairness in an Exam

- Should treat people equally and fairly regardless of the differences in:
 - **Race, gender, ethnicity, politics, religion, age, disability or membership in other similar groups**
- We want our examinations to make distinctions between people based on the knowledge, skills or proficiency in ***the nursing profession alone***

Procedures to Ensure Fairness

Sensitivity review

- Panel of individuals from diverse backgrounds reviews newly written items from their perspective

DIF review

- Quantitative method used to identify items with DIF
- Panel of individuals from diverse backgrounds reviews these items

Sensitivity Panel Review

Criteria for Sensitivity Review

Four criteria for each item during the review:

- Inappropriate Language
- Underlying Assumptions/Stereotyping
- Ethnocentrism
- Inflammatory Language or Content

Inappropriate Language

- Words or phrases that are irrelevant to item content, are not familiar to all REx-PN[®] candidates, or that classify clients by their diagnoses, age, or group affiliation.

Inappropriate Language - Example

The nurse is teaching a **diabetic 50-year-old male** client. Which of the following information should the nurse include?

1. “Wear properly fitting **flip-flops**.”
2. “You may need to monitor your blood glucose level once a day.”
3. “It is important that you recognize the signs and symptoms of hypoglycemia and hyperglycemia.”
4. “Remember ‘**All things in moderation**’ when eating carbohydrates.”

Underlying Assumptions/Stereotyping

- General statements about a group that imply everyone in the group shares a certain characteristic.

Underlying Assumptions/Stereotyping - Example

The nurse is talking with a client newly diagnosed with human immunodeficiency virus (HIV). Which of the following statements would be appropriate for the nurse to make?

1. “Your **same-sex partner** should be tested for HIV.”
2. “You may be prescribed highly active antiretroviral therapy.”
3. “You may want to discuss hospice care with your family.”
4. “You will need to avoid eating raw fruits and vegetables.”

Ethnocentrism

- Assumption that beliefs and standards from an individual's culture are universally true and accepted, and superior to those of others.

Ethnocentrism - Example

The nurse is talking with a client who delivered a baby 16 hours ago. Which of the statements would be appropriate for the nurse to make?

1. “You should quit your job so you can stay home to raise your child.”
2. “You should expect the lochial flow to steadily decrease over the next few days.”
3. “You may want to ask your friends and family members to provide you with assistance when you are discharged.”
4. “You may need the varicella vaccine if you do not have immunity.”

Inflammatory Language or Content

- Words or phrases that may be offensive or condescending to groups or individuals.

Inflammatory Language or Content - Example

The nurse enters a client's room and observes that the continuous cardiac monitor is displaying ventricular tachycardia and the client is reporting chest pain. Which of the following responses should the nurse make **first**?

1. “**Don't worry sweetie.** I will take care of you.”
2. “Help! Somebody help me in here!”
3. “I will begin cardiopulmonary resuscitation (CPR).”
4. “I should obtain a bedside electrocardiogram (ECG).”

Sensitivity Review Procedures

1. Panelists are asked to individually review a group of items.
2. Decide if the item is **Approved** or **Not Approved** based upon the **four criteria** we have reviewed.
 - If **Approved** – select approved and move to the next item.
 - If **NOT Approved** – **state which criteria** the item has violated and include any further comments.
3. After all panelists have reviewed the items, the results are uploaded, and the items that were **NOT Approved** are reviewed by the group.
4. The group will discuss the items, and the group will reach consensus about whether the item is **Approved or Not Approved**.

Differential Item Functioning (DIF) Panel Review

What Does Differential Item Functioning (DIF) mean?

- Each REx-PN[®] item should measure only the knowledge, ability or skills in nursing
- DIF means that an item behaves differently for various examinee groups of *equivalent ability*

DIF Terms

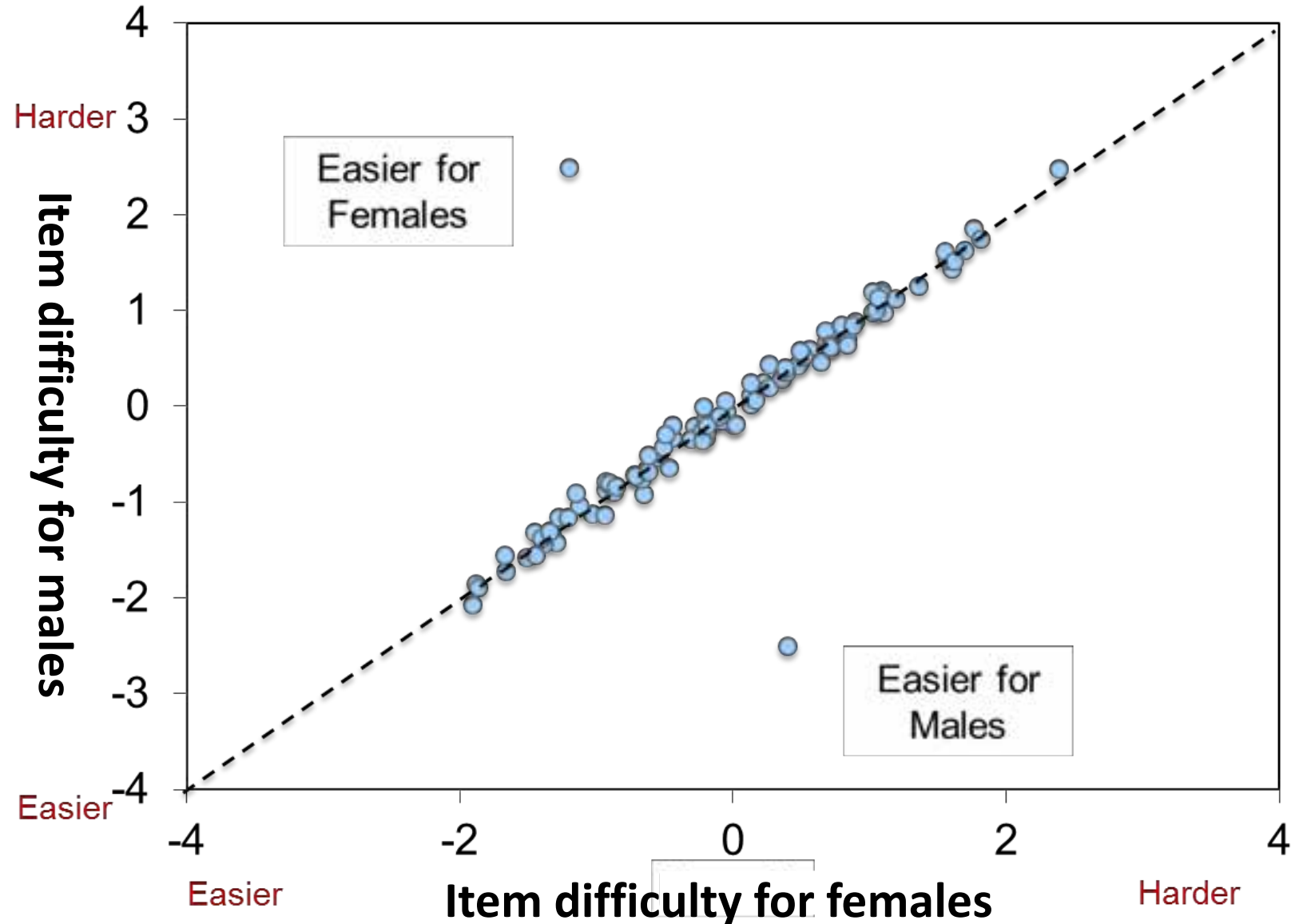
Reference group

- traditional demographic groups **for REx-PN[®]**
(*females, white*)

Focal group

- males, non-white

The Concept of DIF



DIF Panel Review

- If an item shows a statistically significant amount of DIF, it is reviewed by a DIF panel to determine if there is an identifiable problem with the content
- If the panel determines that there is bias, the item is reviewed by Practical Nurse Exam Committee (PNEC)

If an Item Shows DIF, So What?

If an item shows DIF, it could mean:

Although the statistics were positive for DIF, there is no evidence from reading the item itself that DIF exists

There is a genuine group difference, but nursing content requires this concept to be tested (e.g., obstetrics items)

There is an extraneous feature within the item causing this (wording, unusual terminology)

Previous Findings

Nursing content that has shown DIF in the past:

- obstetrics, gynecology
- equipment, machines
- the family, extended family, community
- foods, nutrition
- childrearing, toys
- admitting relatives into nursing homes
- public expressions of strong emotions

DIF Review Process

1. Read the item and the indicated group(s) showing DIF
2. Form hypotheses about why the item may have shown DIF for or against a group
3. Vote to refer the item to the PNEC

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Thank you!