Evaluating the psychometric properties of a questionnaire designed to assess headache characteristics and management among student pharmacists in the United States (US)

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Background

- Headache has been shown to negatively impact the productivity, quality of life and academic performance of students[1-4].

- Several instruments have been developed to investigate the impact and management of headache symptoms among students[2-4].

- It is important to assess the validity and reliability of such instruments.

Objective

- To assess the psychometric properties of an instrument designed to assess the individual characteristics and management strategies of headache among student pharmacists.

Method

- A 61-item survey designed to assess headache characteristics and management among student pharmacists was assessed[3].

- Items were grouped into four domains: headache triggers, impact of headache, pharmacologic, and nonpharmacologic management[3].

- Students' responses were on a scale of 0 (non-existent) to 5 (greatest extent)[3].

- Rasch analysis (using Winsteps v4.8) was used to determine evidence of instrument's validity and reliability by assessing unidimensionality, scale functionality, item and person fit statistics, reliability coefficients (RC), and separation indices (SI).
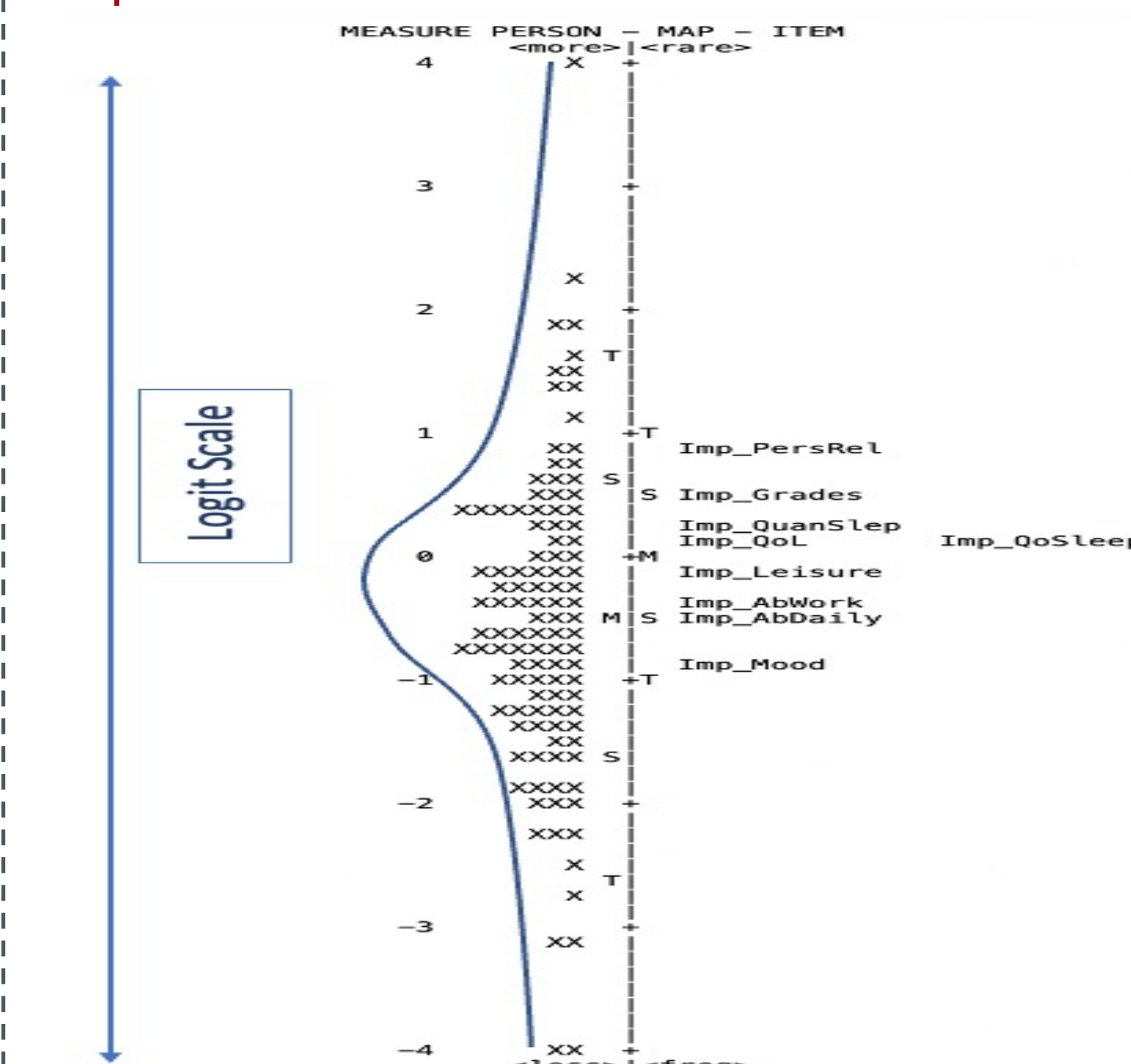
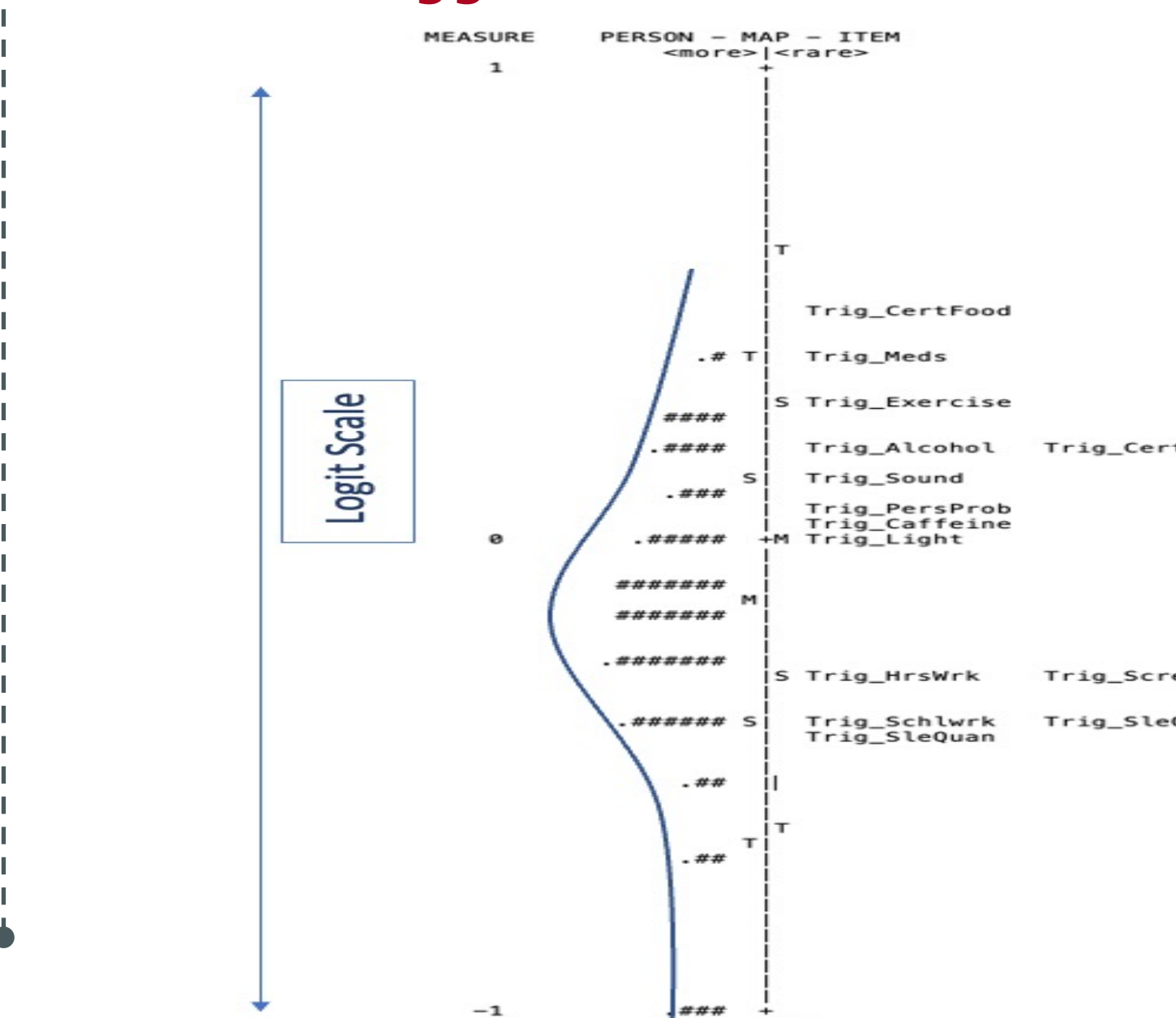**Figure 1:** Item-person map for non-pharmacologic management of headache
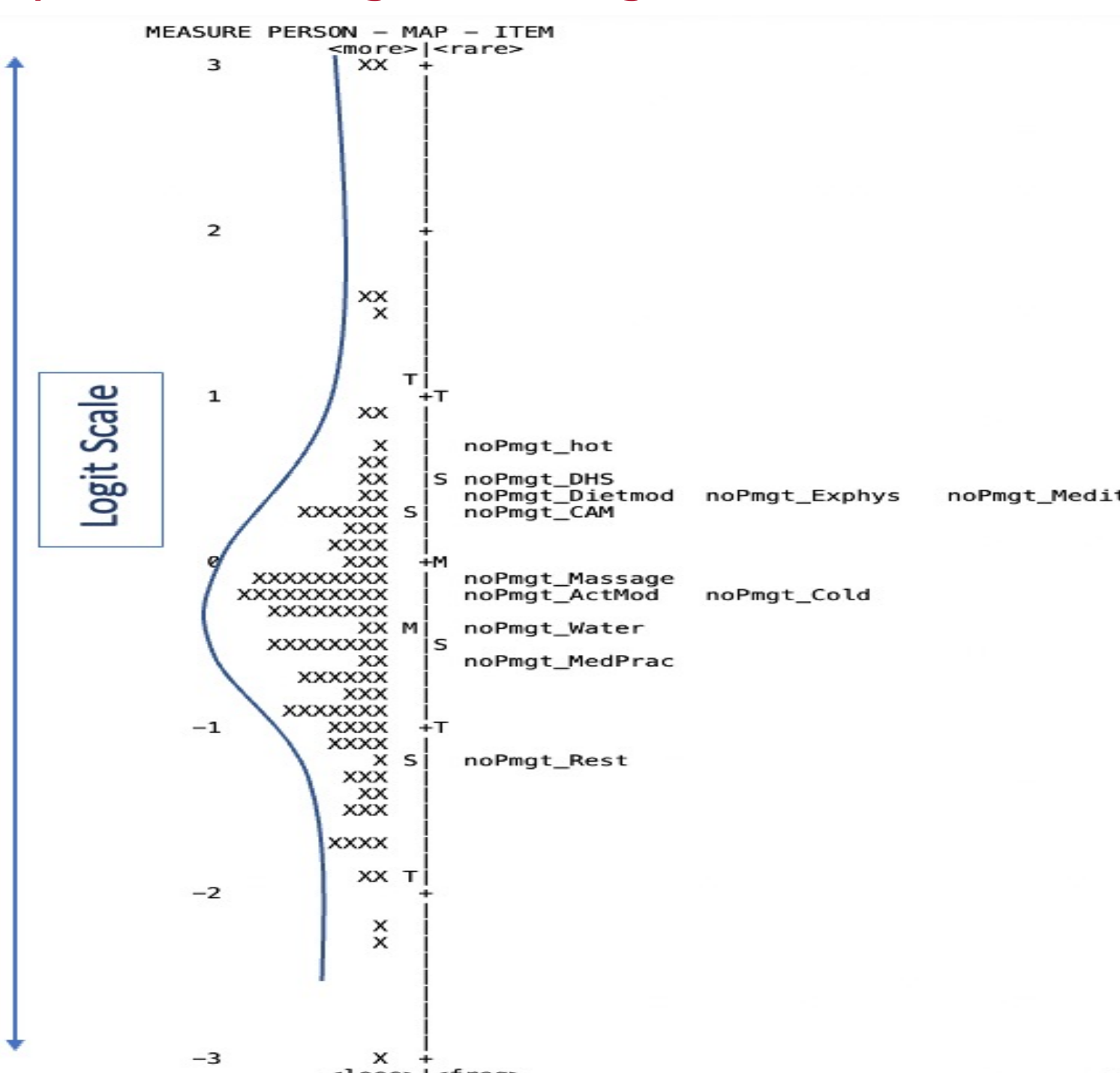
Figure 2: Item-person map for pharmacologic management of headache
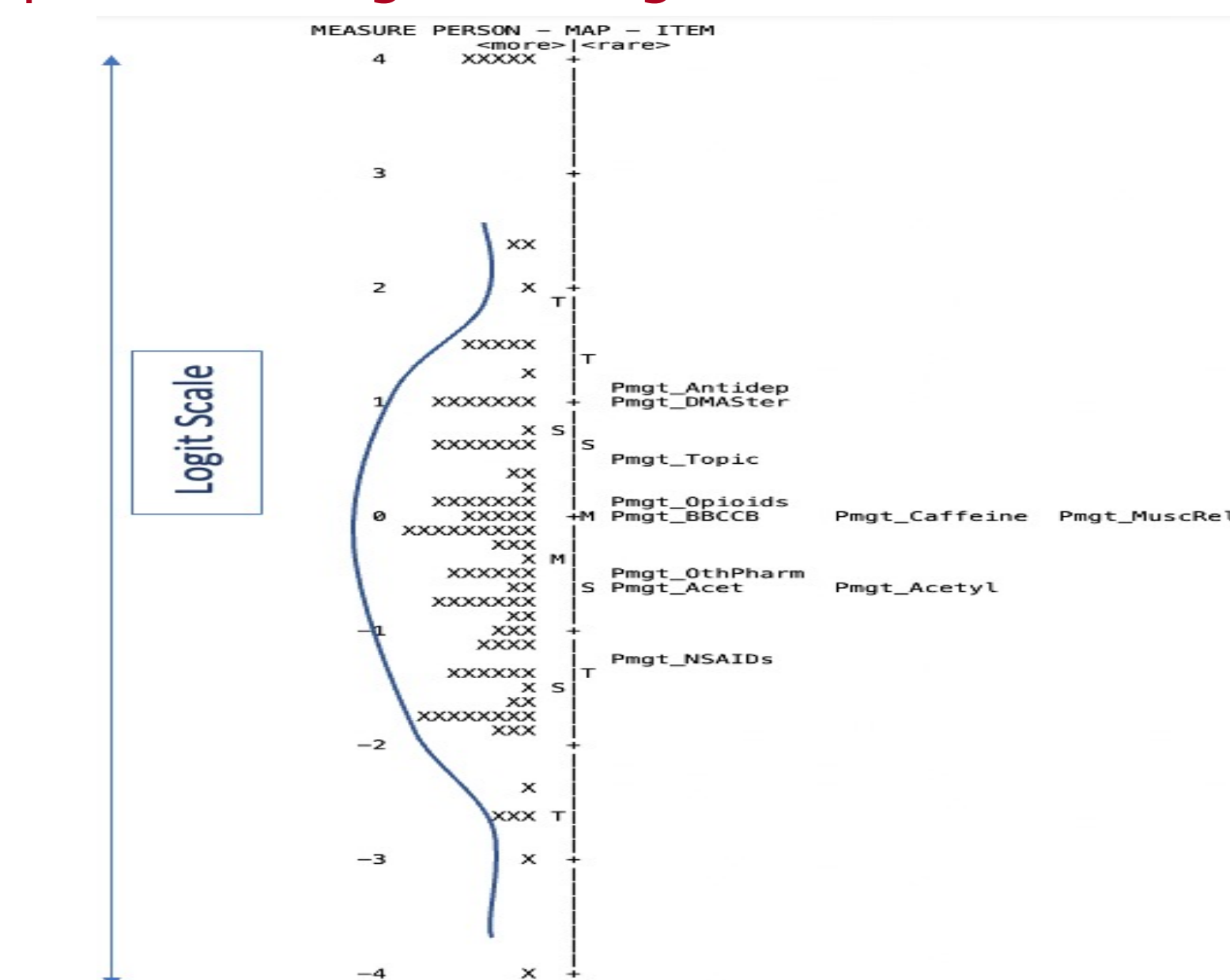
Figure 3: Item-person map for negative impact of headache

Figure 4: Item-person map for headache triggers

Results

- Principal component analysis suggested a unidimensional construct in all four domains.

- Four items in the pharmacological domain scale functionality values outside the recommended range were removed.

- Students RC = 0.66-0.86 (SI=1.31-2.50)

- Item RC = 0.90-0.97 (SI=3.08-5.36).

- Sleep quantity was most frequently endorsed as a headache trigger, while non-steroidal anti-inflammatory drugs were most strongly endorsed as beneficial for managing headaches

- Disparities in student perceptions and item difficulty level on the measurement continuum suggests additional items are needed to match students' headache perceptions.

Conclusion

- This study showed evidence for the validity and reliability of an instrument used to assess characteristics and management of headache among student pharmacists at one US college of pharmacy. Refinements to further improve the instrument are recommended.

References

1. Öcal et al. (2021). Frequency of headache among university students and its effect on daily living activities. Neurology Asia.
2. Souza-e-Silva et al. (2011). Headaches and Academic Performance in University Students: A Cross-Sectional Study. Headache: The Journal of Head and Face Pain, 51.
3. Axon et al. (2022). Student pharmacist characteristics and management of headache. Currents in pharmacy teaching & learning, 14(9), 1169–1176.
4. Montgomery. (1994). Headache characteristics among high school and university students. Headache, 34(5), 247–256.