

Harmonisation of Mental Health Measures Across International Cohorts

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ABSTRACT

Cross-national studies of mental health are essential for understanding population differences and changes over time, but comparisons are often limited by the use of different assessment instruments across cohorts. Harmonising measures requires ensuring that constructs are conceptually equivalent and psychometrically comparable across cultural contexts. We developed and evaluated a theory-driven framework to harmonise depression and anxiety measures between **ELSA-UK** and **ELSA-Brasil** and assessed measurement invariance to determine whether meaningful comparisons could be made across cohorts and over time.

METHODS

Harmonisation Pipeline

1

Identify measures

Select depression and anxiety questionnaires from ELSA-UK and ELSA-Brasil.

2

Map items

Match questionnaire items to DSM-5 symptom domains through expert review.

3

Harmonise responses

Recode different response formats into a common set of ordinal categories.

4

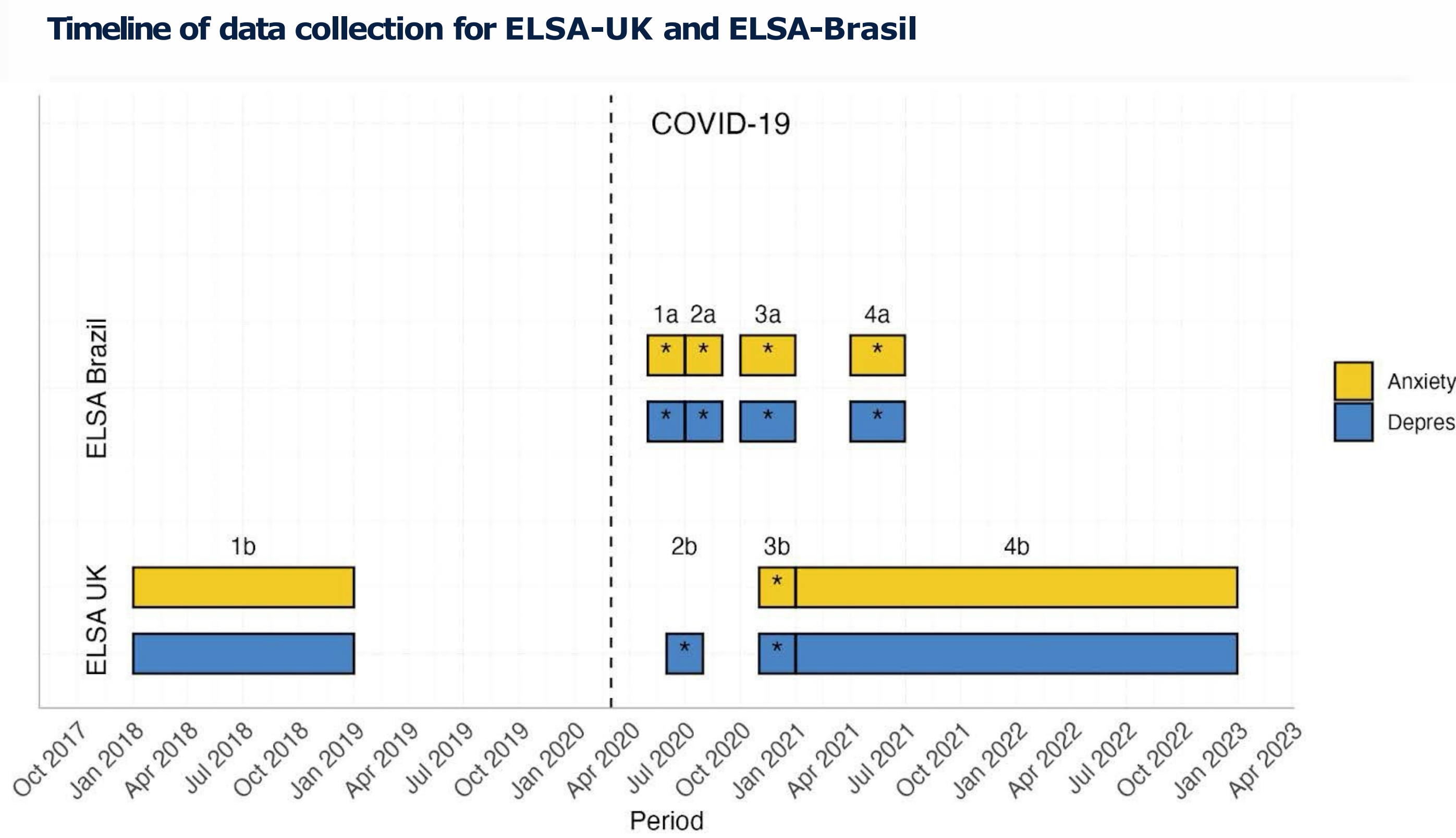
Assess semantic equivalence

Use the Harmony AI tool to identify conceptually equivalent items across cohorts.

5

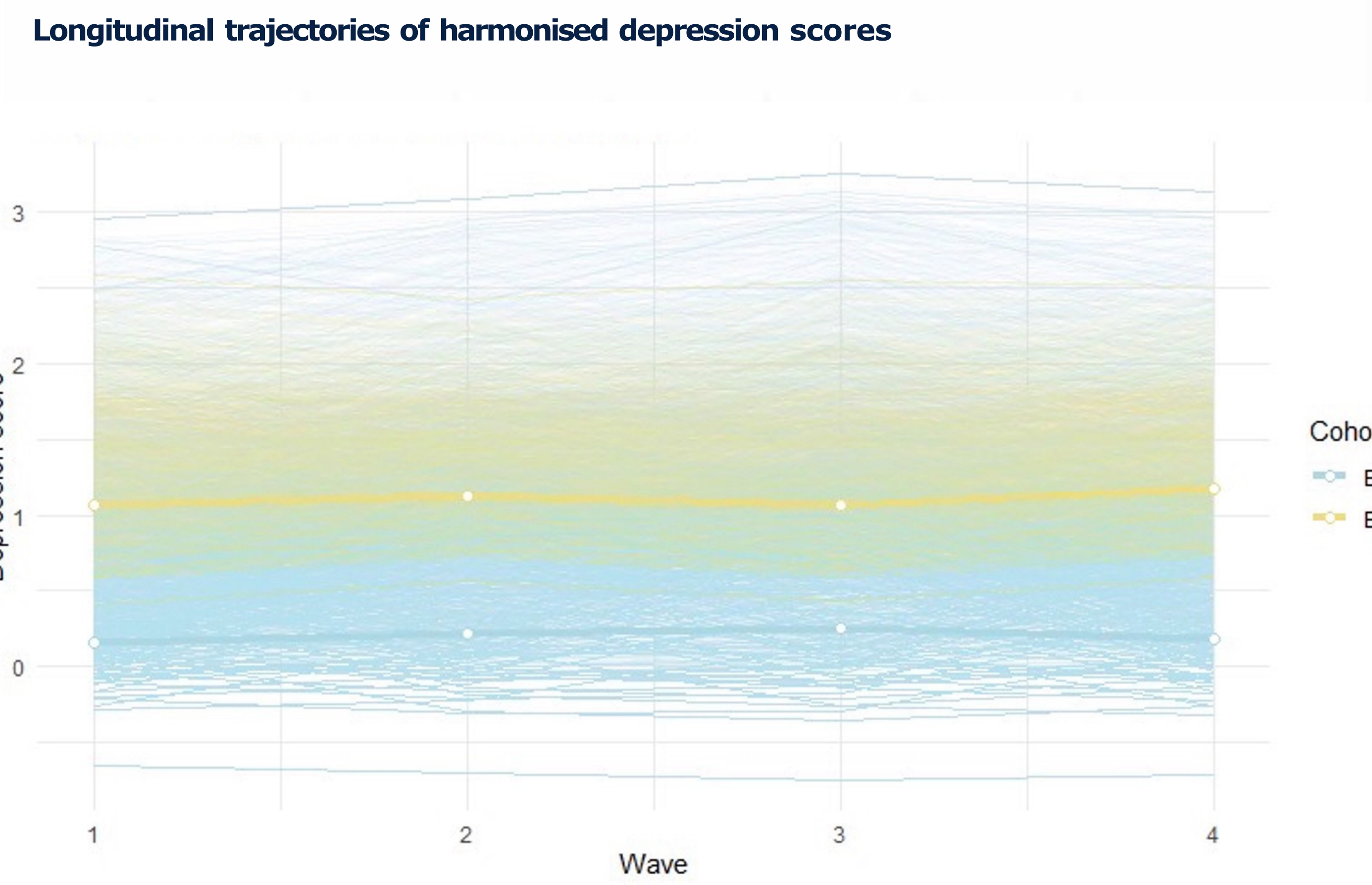
Validate scale invariance

Test longitudinal and cross-cohort measurement invariance using multi-group confirmatory factor analysis (MGCFA).



RESULTS

Invariance Level	ELSA-UK	ELSA-Brasil
Configural Invariance	Met	Met
Metric Invariance	Met	Met
Scalar Invariance	Met	Unmet



DISCUSSION

- A theory-driven harmonisation framework can enable valid cross-national comparisons of mental health despite differences in measurement instruments.
- Integrating expert review, AI-assisted item matching, and measurement invariance testing strengthens the validity of retrospective harmonisation.
- The success of harmonisation depends on the conceptual overlap and quality of available items, particularly for complex constructs such as anxiety.
- This framework provides a scalable methodological template for future international ageing and mental health research.

FUTURE RESEARCH

- Apply this harmonisation framework across additional international cohorts to strengthen global mental health research.
- Expand and refine harmonised item pools, particularly for anxiety, to improve cross-cohort comparability.
- Evaluate the framework across diverse cultural, linguistic, and clinical populations.
- Use harmonised latent measures to investigate cross-national mental health trajectories and the impact of policy, social, and environmental factors on mental health over time.