discrimination and calibration for performance of a model. Framingham risk score (FRS) for cardiovascular disease is a widely used one which has been validated in different countries but its clinical usefulness has been neglected.

Methods We checked discrimination and clinical usefulness before and after recalibration in a population-based cohort, Tehran lipid and glucose study, of 2640 men and 3584 women aged 30–74 years. To check clinical usefulness, we used decision curve analysis (DCA) and calculated net benefit of treatment for patients with ≥20% of 10 year probability of disease according to FRS model.

Results The area under the curve for FRS model, was 0.794 and 0.838 for men and women respectively. The original model had a poor calibration but got a good one after recalibration (Hosmer-Lemeshow $\chi^2$ statistic of 16.8 for men and 18.4 for women). Based on DCA, FRS was clinically useful in cut points of 10%–50%, as threshold probability of disease that a patient should be treated, before and after recalibration. The net benefit of model to treat patients at cut point of 20% did not differ significantly before and after recalibration in both men and women ($p>0.3$ based on bootstrap resampling).

Conclusion Original FRS has a good discrimination and poor calibration in Iran but considering clinical usefulness, it can be used even without recalibration.

P1-32 TESTING LIFE COURSE MODELS TO INVESTIGATE THE EFFECT OF SOCIOECONOMIC POSITION ON CRYSTALLISED COGNITIVE FUNCTION IN OLDER AGE, ACCOUNTING FOR MISSING DATA
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Objective To investigate how lifetime socioeconomic position (SEP) is associated with later-life crystallised cognitive function, accounting for different missing data mechanisms.

Participants A nationally representative population sample born in 1946 (MRC National Survey of Health and Development; NSHD, N=5362), and a sample of British civil servants (Whithead II; WHII, N=10,305).

Methods Novel structured statistical approach to distinguish between accumulation and sensitive period life course models using SEP measures from childhood, early-adulthood and midlife. Results of complete case (CC) (assuming missing completely at random), multiple imputation (MI) (missing at random) and a Heckman selection model (missing not at random) were compared.

Outcomes National Adult Reading Test, age 55 (NSHD); Mill Hill Test, age 55–79 (WHII).

Results NSHD: After adjusting for childhood cognitive function, the best fitting model was an accumulation model allowing SEP at each time point to have its own estimate. However estimates varied by missing data method (women: childhood SEP: CC: coefficient=1.11 (95% CI 0.15 to 2.06); MI: coefficient=1.22 (95% CI 0.87 to 2.76), Heckman: coefficient=0.70 (95% CI −0.38 to 1.78)). WHII (not adjusted for childhood cognition): the best fitting model represented accumulation in adulthood only, with childhood SEP not significant.

Conclusion Despite adjustment for childhood cognitive score, childhood SEP remains important in NSHD, whereas in Whithead II childhood SEP was not associated with cognitive function. These differences may be due to recall bias of early SEP in WHII. Our findings demonstrate the utility of the method for distinguishing models of how SEP across the life course influences cognition and the importance of dealing with missing data.