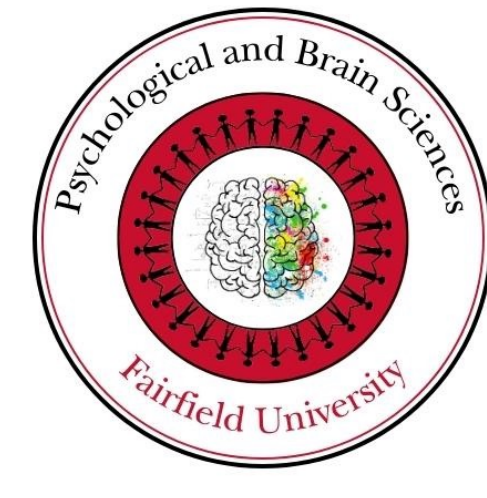


# Psychological Well-Being Among Adolescent Girls in the World Health Organization-HBSC Survey: The Impact of Early Menarche on Mental Health, Body Image, and Life Satisfaction



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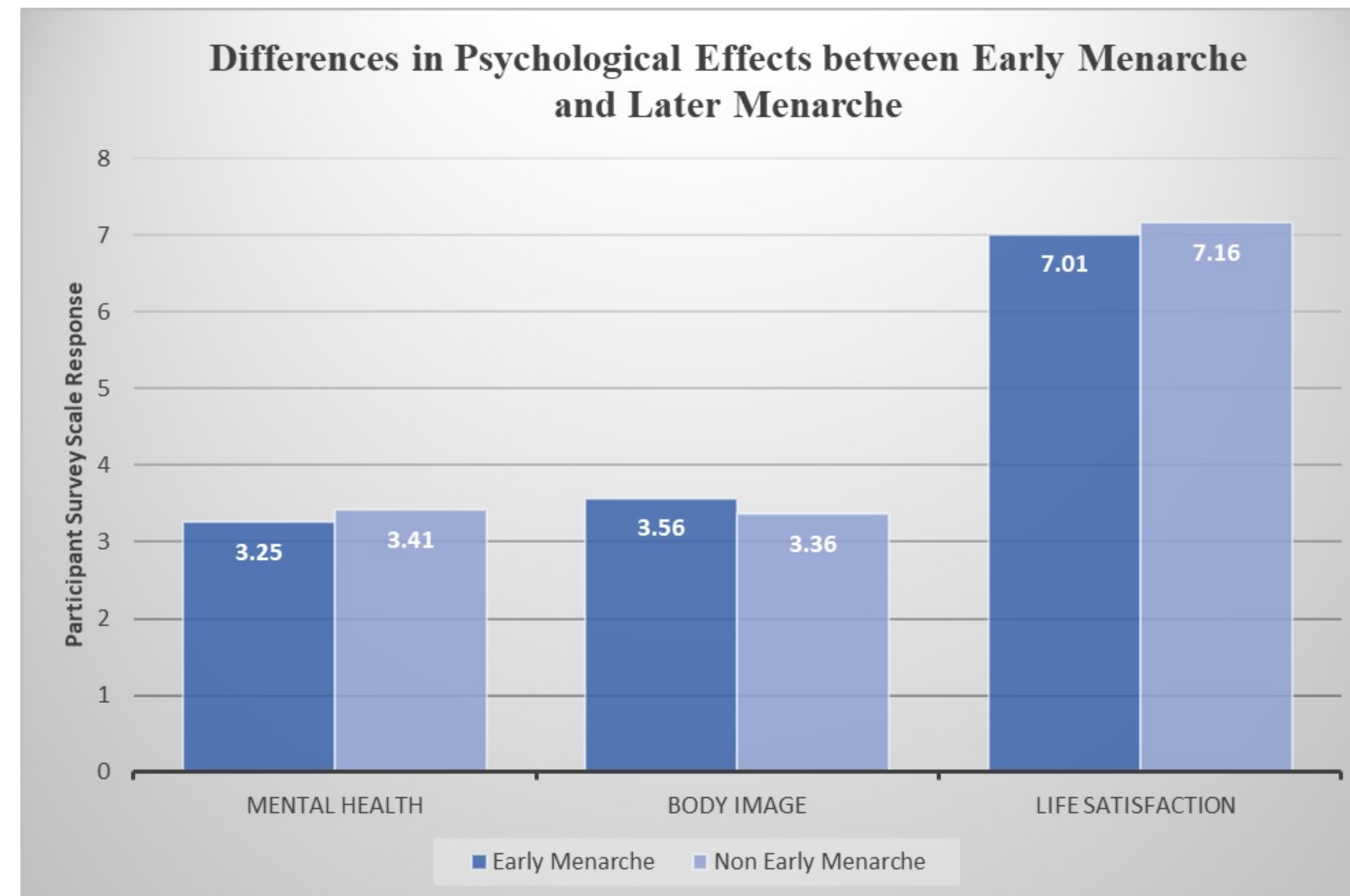
- Many mental health (MH) conditions first develop during **adolescence** (e.g., Solmi et al., 2022), and there has been a global increase in MH problems in the last decade – particularly among **adolescent girls** (see Cosma et al., 2023; Racine et al., 2021).
- Early puberty for girls (**i.e., early menarche [EM]**) is one identified risk factor for MH problems and other negative psychosocial outcomes (e.g., Vijayakumar & Whittle, 2023), and **the age of puberty is generally decreasing globally** (e.g., Leone & Brown, 2020).
- To date, few studies have evaluated the link between EM and psychological well-being (PWB) with large international datasets (e.g., Currie & Morgan, 2020; Lian et al., 2022; Stepan et al., 2019). Thus, our **research goal** was to leverage a global sample of adolescent girls to further explore links between EM and PWB.



## Method

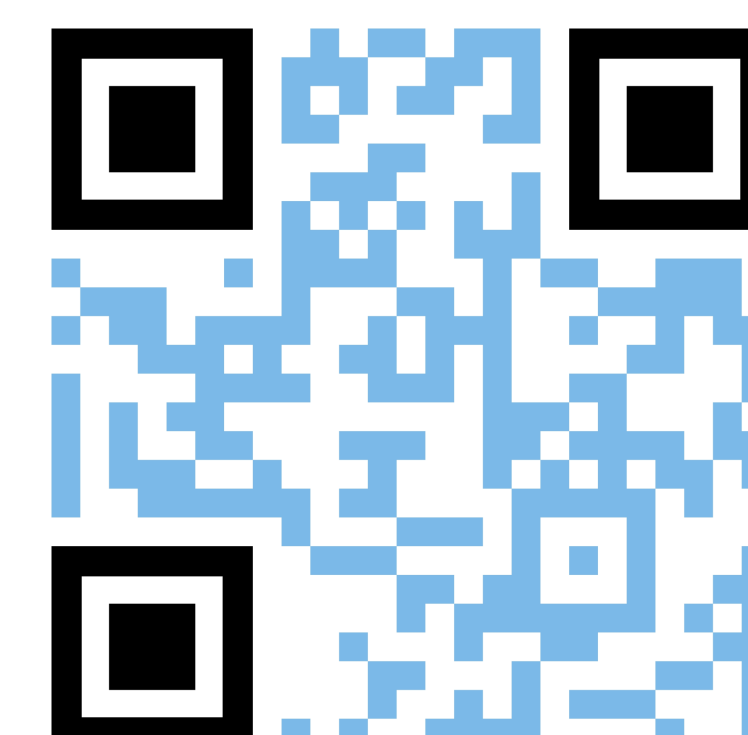
- 2014 dataset (last year EM measured): **World Health Organization-Health Behavior in School-Aged Children (WHO-HBSC)**, a quadrennial survey (Cosma et al., 2023; Kelly et al., 2021).
- Total  $N = 56,767$  (i.e., girls who have had menarche),  $M_{age} = 14.5$ ,  $SD = 1.3$ 
  - EM group (< age 11):**  $n = 4,328$
  - Non-EM ( $\geq$  age 11):**  $n = 52,439$
- Hypothesis:** girls with EM (v. non-EM) will report poorer PWB, i.e., MH (HBSC-Symptom Checklist-psychological symptoms), body image (BI; single-item), and life satisfaction (LI; Cantril Scale/Ladder), controlling for age and BMI.

Adolescent girls with **earlier menarche** ( $< age\ 11\ v.\ \geq\ age\ 11$ ) reported **poorer psychological well-being** in a global sample.



**MH scale:** 1-5 scale; 1 = *about every day*, 5 = *rarely or never*  
**BI scale:** 1-5 scale; 1 = *much too thin*, 5 = *much too fat*  
**LS scale:** 0-10 scale; 0 = *worst possible life*, 10 = *best possible life*

HBSC website



Copy of this poster



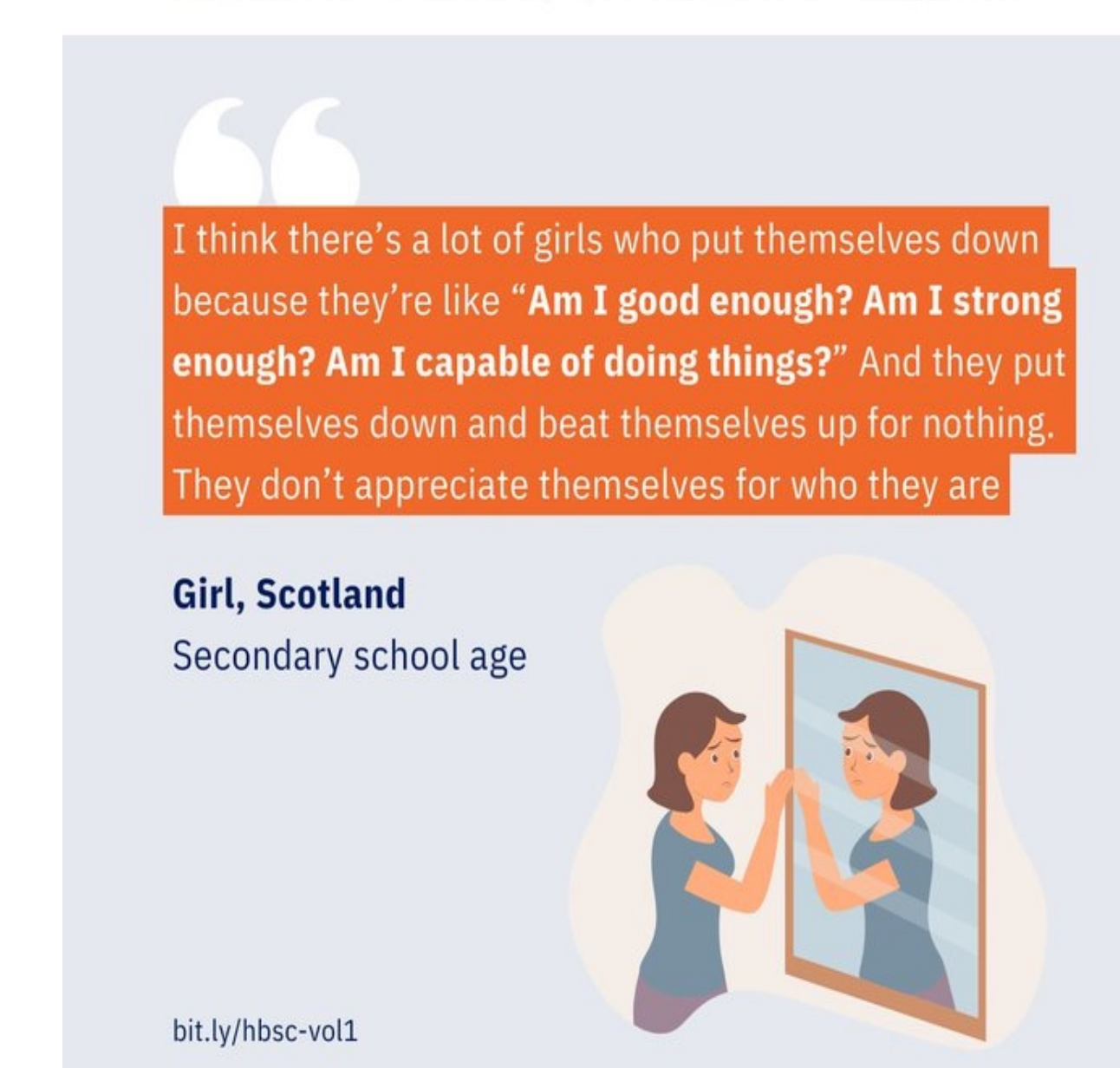
## Results

- Main data analysis plan: MANCOVA** (all three dependent variables were significantly correlated,  $p$ 's  $< .001$ ), **controlling for age and BMI**.
- Total sample MANCOVA results:  $F(3,45704) = 42.19$ ,  $p < .001$ , Pillai's Trace = .003 (**hypothesis supported**).
- Cross-national MANCOVA results: **our hypothesis was only partially supported, i.e., in 12/38 countries/regions (~32%)**.

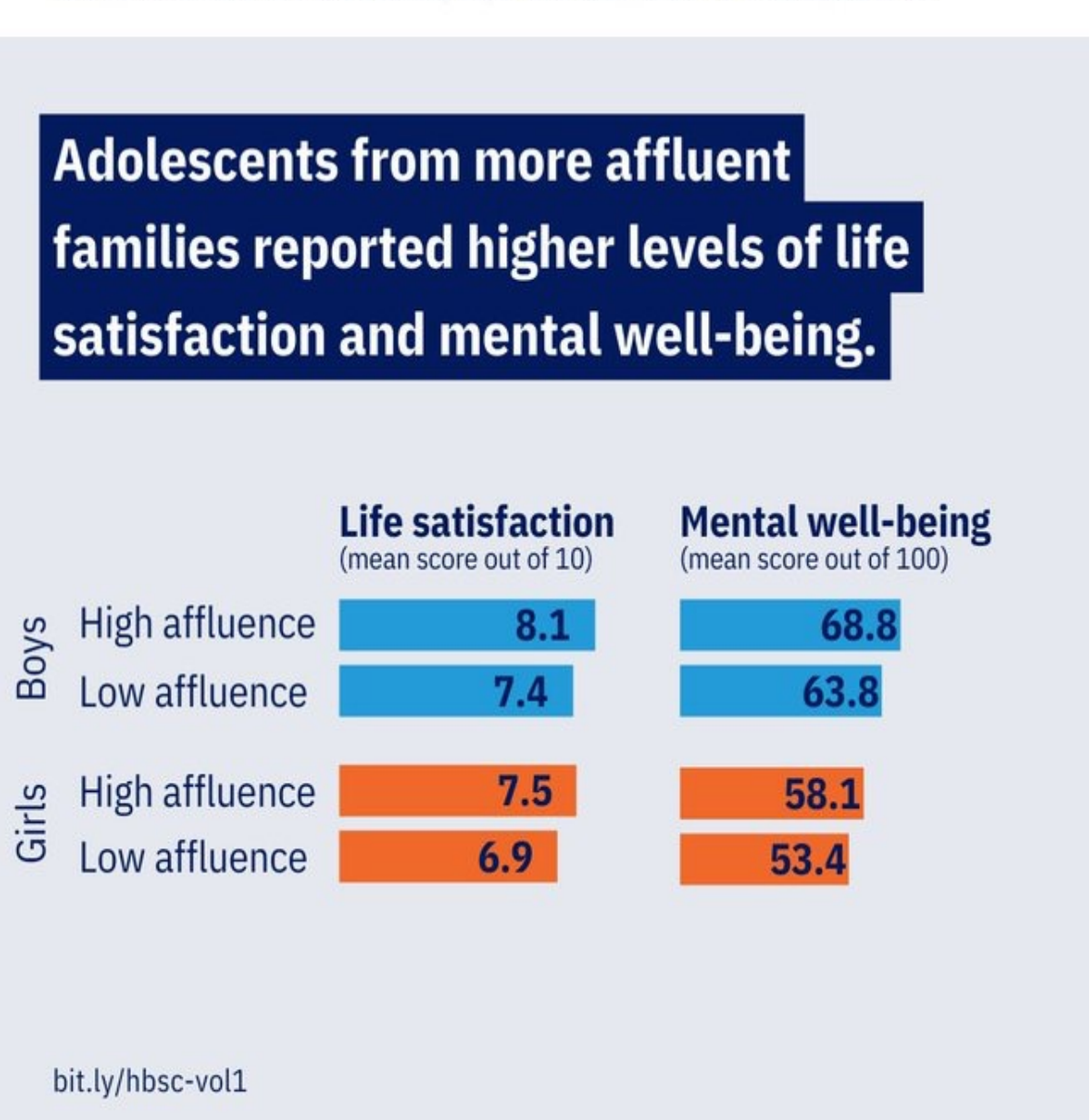
## Discussion

- Early menarche was significantly associated with poorer psychological well-being in a large global sample, though a relatively small effect size and significant heterogeneity by country/region.
- Clinical implications:** targeting high-risk factors among youth with EM, such as PWB and risky behaviors (Vijayakumar & Whittle, 2023); work guided by bioecological models (e.g., Bronfenbrenner; see Currie & Morgan, 2020).
- Future work:** cross-cultural differences; risk and resilience factors; current adolescent samples; boys' puberty; *“developmental readiness”* hypothesis

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**References:** available upon request | **Contact:** [jdeluca@fairfield.edu](mailto:jdeluca@fairfield.edu)  
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