Changes in the epidemiological indicators of Female Infertility in Europe (1991–2021)

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OBJECTIVES

Infertility is a major global public health issue, affecting approximately 48 million couples and 186 million individuals, including 120 million women. Its prevalence has been increasing in Europe as well. The aim of our study was to examine the prevalence of female infertility between 1991 and 2021 in Central, Eastern, and Western Europe and compare these findings with data from Hungary.

METHODS

We conducted a retrospective, quantitative analysis using data from the 2021 Global Burden of Disease Study (GBD 2021) by the Institute for Health Metrics and Evaluation (IHME). We focused on infertility prevalence and Disability-Adjusted Life Years (DALYs), evaluating all data per 100,000 population. Trends were analyzed by European regions as defined by the GBD and compared with Hungarian figures.

RESULTS

In 1991, Eastern Europe had the highest infertility prevalence (3231.59/100,000), while Western Europe had the lowest (862.31/100,000). Central Europe fell in between (2024.02/100,000) *(Figure 1)*. These regional patterns remained similar in 2021, though prevalence increased overall (Eastern: 3292.89, Western: 1120.48, Central: 2258.85), particularly in Western Europe, where a 30% rise was observed *(Figure 3)*. In contrast, Hungary showed a declining trend, with prevalence dropping from 1797.49 to 1593.16 *(Figure 2 & 4)*. DALY values were also highest in Eastern Europe (1991: 18.04 years; 2021: 18.09 years) and lowest in Western Europe (1991: 4.97 years; 2021: 6.34 years). Central Europe's DALYs increased from 10.96 to 12.05 years, with Western Europe seeing the largest relative increase (27.57%) *(Figure 5)*. In Hungary, DALYs decreased from 9.56 to 8.48 years *(Figure 6 & 8)*. Age-specific data showed the highest prevalence and DALY rates in the 30–34 age group in Central and Eastern Europe, and in the 40–44 age group in Western Europe *(Figure 7)*.

CONCLUSIONS

Infertility prevalence increased across Europe, especially in Western Europe, while Hungary showed a declining trend. These findings highlight regional disparities and provide a basis for targeted health policy interventions for infertility prevention and management.

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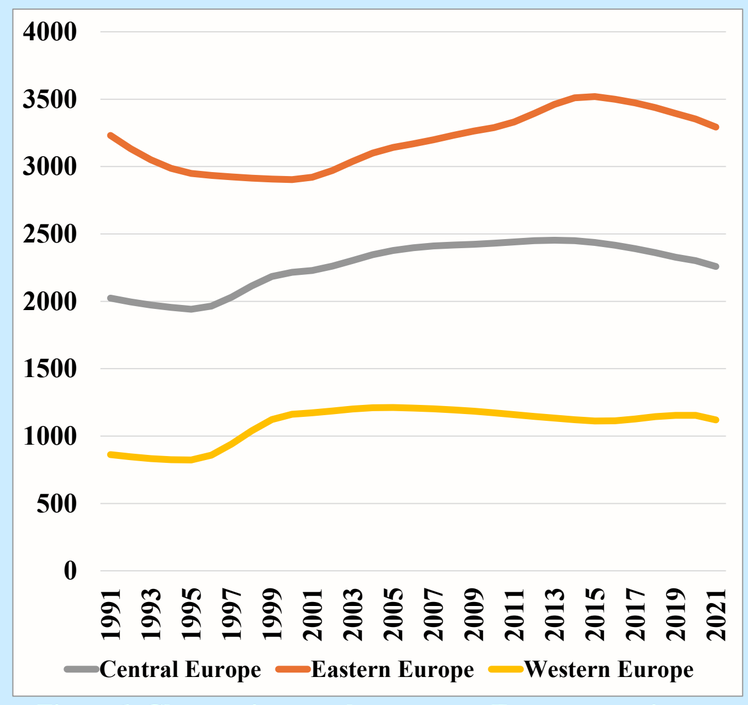

Figure 1. Changes in prevalence across European regions (1991–2021)

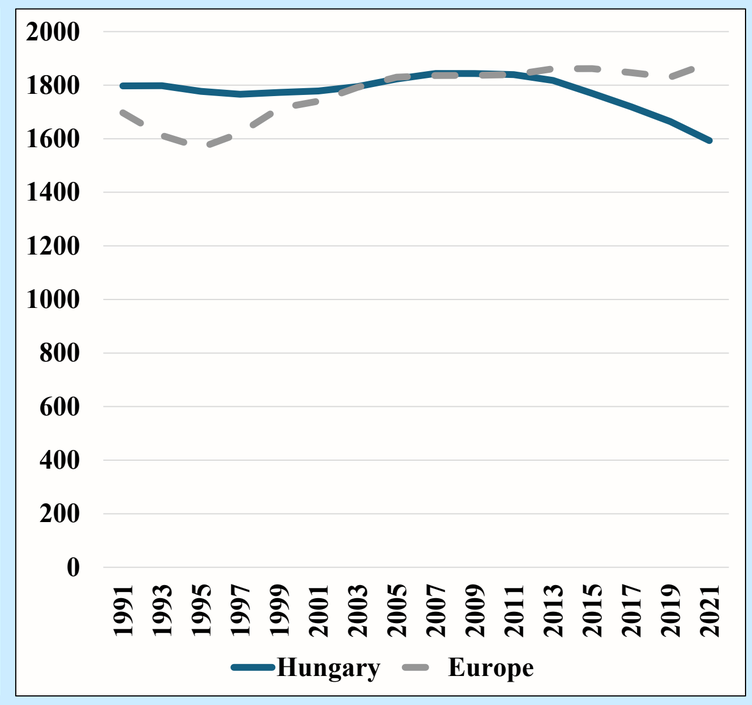

Figure 2. Changes in prevalence in Hungary and Europe (1991–2021)

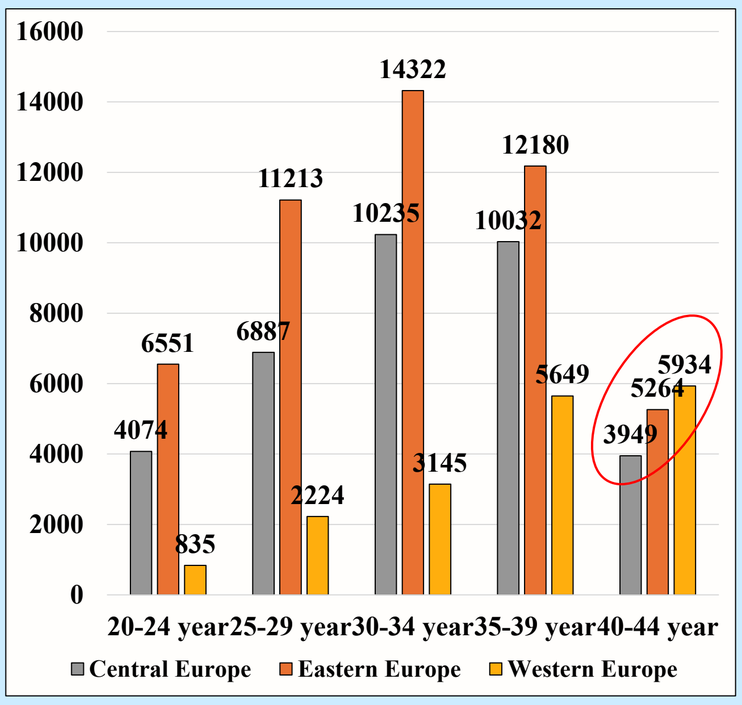

Figure 3. Prevalence by age group, European regions (2021)

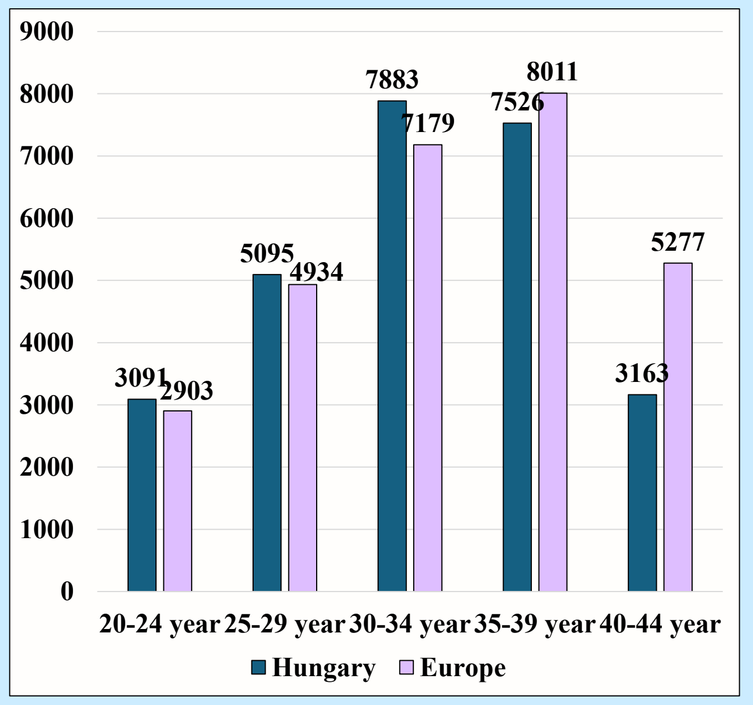

Figure 4. Age-specific prevalence in 2021: Hungary compared with Europe

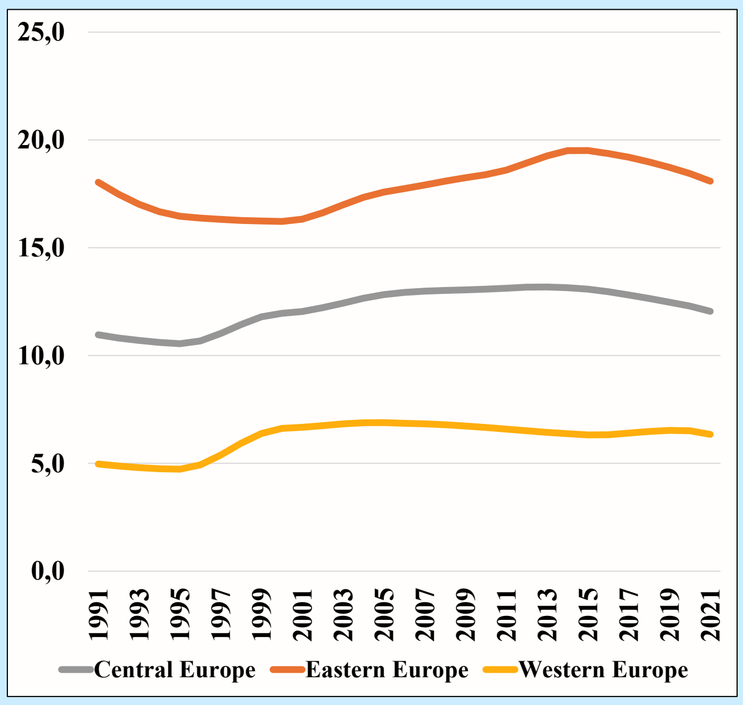

Figure 5. Changes in DALYs across European regions (1991–2021)

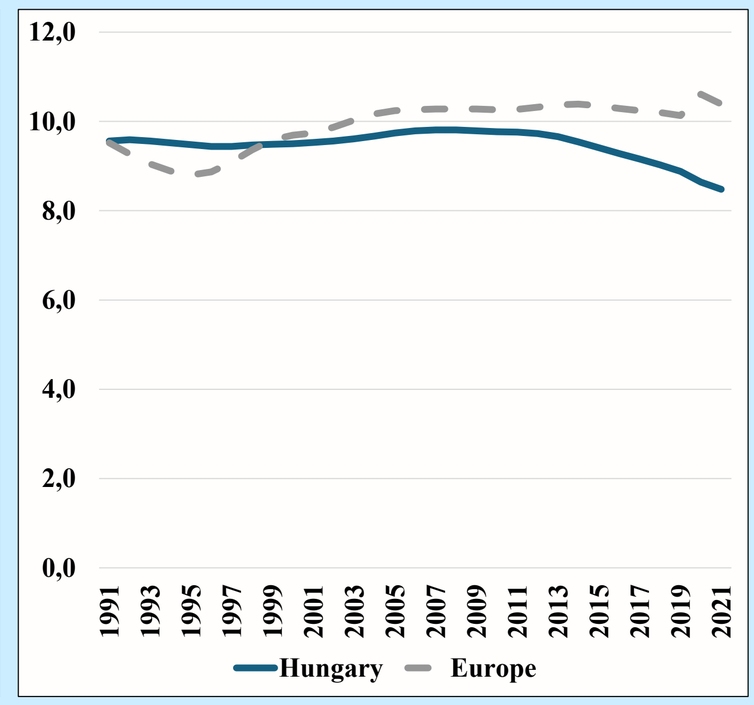

Figure 6. Changes in DALYs in Hungary and Europe (1991–2021)

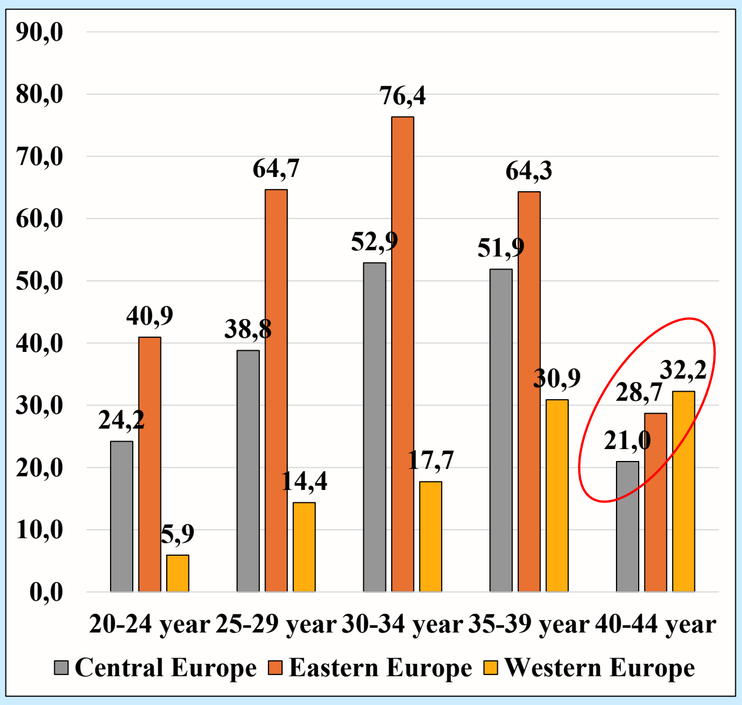

Figure 7. DALYs by age group, European regions (2021)

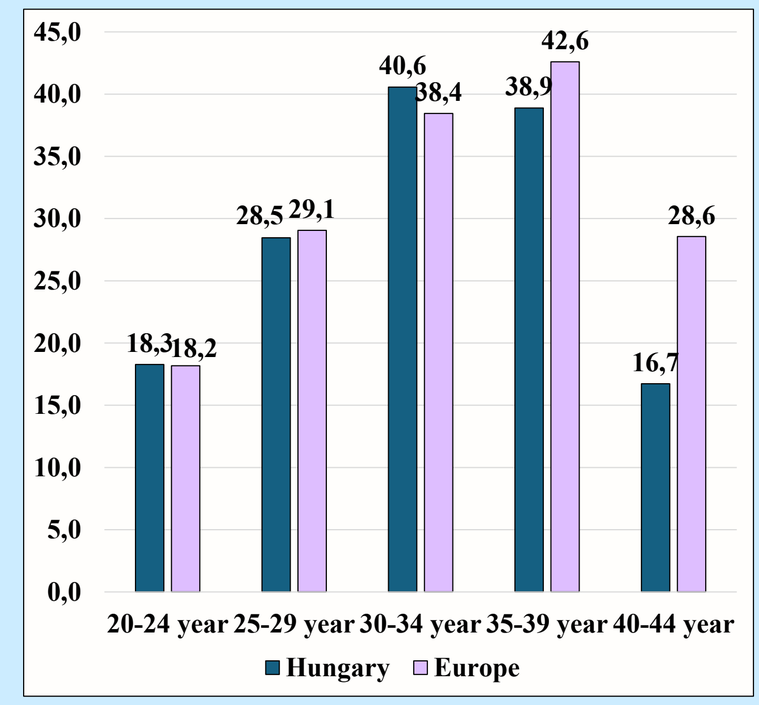

Figure 8. Age-specific DALY in 2021: Hungary compared with Europe